General

Guideline Title

Intrapartum care: care of healthy women and their babies during childbirth.

Bibliographic Source(s)

National Collaborating Centre for Women's and Children's Health. Intrapartum care: care of healthy women and their babies during childbirth. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Dec. 108 p. (Clinical guideline; no. 190).

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: National Collaborating Centre for Women's and Children's Health. Intrapartum care. Care of healthy women and their babies during childbirth. London (UK): National Institute for Health and Clinical Excellence (NICE); 2007 Sep. 65 p. (Clinical guideline; no. 55).

This guideline meets NGC's 2013 (revised) inclusion criteria.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- August 31, 2016 – Opioid pain and cough medicines combined with benzodiazepines : A U.S. Food and Drug Administration (FDA) review has found that the growing combined used of opioid medicines with benzodiazepines or other drugs that depress the central nervous system (CNS) has resulted in serious side effects, including slowed or difficult breathing and deaths. FDA is adding Boxed Warnings to the drug labeling of prescription opioid pain and prescription opioid cough medicines and benzodiazepines.
- March 22, 2016 – Opioid pain medicines : The U.S. Food and Drug Administration (FDA) is warning about several safety issues with the entire class of opioid pain medicines. These safety risks are potentially harmful interactions with numerous other medications, problems with the adrenal glands, and decreased sex hormone levels. They are requiring changes to the labels of all opioid drugs to warn about these risks.

Recommendations

Major Recommendations

Note from the National Guideline Clearinghouse (NGC): This guideline was developed by the National Collaborating Centre for Women's and Children's Health (NCC-WCH) on behalf of the National Institute for Health and Care Excellence (NICE). See the "Availability of Companion Documents" field for the full version of this guidance.

Recommendations are marked as [new 2014], [2014], [2007] or [2007, amended 2014]:

- [new 2014] indicates that the evidence has been reviewed and the recommendation has been added or updated
- [2014] indicates that the evidence has been reviewed but no change has been made to the recommended action
- [2007] indicates that the evidence has not been reviewed since 2007
- [2007, amended 2014] indicates that the evidence has not been reviewed since 2007, but changes have been made to the recommendation wording that change the meaning (see below).

The wording used in the recommendations in this guideline (for example, words such 'offer' and 'consider') denotes the certainty with which the recommendation is made (the strength of the recommendation).

Place of Birth

Choosing Planned Place of Birth

Women at Low Risk of Complications

Explain to both multiparous and nulliparous women who are at low risk of complications that giving birth is generally very safe for both the woman and her baby. [2014]

Explain to both multiparous and nulliparous women that they may choose any birth setting (home, freestanding midwifery unit, alongside midwifery unit or obstetric unit), and support them in their choice of setting wherever they choose to give birth:

- Advise low-risk multiparous women that planning to give birth at home or in a midwifery-led unit (freestanding or alongside) is particularly suitable for them because the rate of interventions is lower and the outcome for the baby is no different compared with an obstetric unit.
- Advise low-risk nulliparous women that planning to give birth in a midwifery-led unit (freestanding or alongside) is particularly suitable for them because the rate of interventions is lower and the outcome for the baby is no different compared with an obstetric unit. Explain that if they plan birth at home there is a small increase in the risk of an adverse outcome for the baby. [new 2014]

Using Tables 1 and 2 in the original guideline document, explain to low-risk multiparous women that:

- Planning birth at home or in a freestanding midwifery unit is associated with a higher rate of spontaneous vaginal birth than planning birth in an alongside midwifery unit, and these 3 settings are associated with higher rates of spontaneous vaginal birth than planning birth in an obstetric unit
- Planning birth in an obstetric unit is associated with a higher rate of interventions, such as instrumental vaginal birth, caesarean section and episiotomy, compared with planning birth in other settings
- There are no differences in outcomes for the baby associated with planning birth in any setting. [new 2014]

Using Tables 3 and 4 in the original guideline document, explain to low-risk nulliparous women that:

- Planning birth at home or in a freestanding midwifery unit is associated with a higher rate of spontaneous vaginal birth than planning birth in an alongside midwifery unit, and these 3 settings are associated with higher rates of spontaneous vaginal birth than planning birth in an obstetric unit
- Planning birth in an obstetric unit is associated with a higher rate of interventions, such as instrumental vaginal birth, caesarean section and episiotomy, compared with planning birth in other settings
- There are no differences in outcomes for the baby associated with planning birth in an alongside midwifery unit, a freestanding midwifery unit or an obstetric unit
- Planning birth at home is associated with an overall small increase (about 4 more per 1000 births) in the risk of a baby having a serious medical problem compared with planning birth in other settings. [new 2014]

Ensure that all healthcare professionals involved in the care of pregnant women are familiar with the types and frequencies of serious medical problems that can affect babies (see Appendix A in the original guideline document), in order to be able to provide this information to women if they request it. [new 2014]

Commissioners and providers (this can also include networks of providers) should ensure that all 4 birth settings are available to all women (in the local area or in a neighbouring area). [new 2014]

Give the woman the following information, including local statistics, about all local birth settings:

- Access to midwives, including:
  - The likelihood of being cared for in labour by a familiar midwife
  - The likelihood of receiving one-to-one care throughout labour (not necessarily being cared for by the same midwife for the whole of labour)
- Access to medical staff (obstetric, anaesthetic and neonatal)
- Access to pain relief, including birthing pools, Entonox, other drugs and regional analgesia
- The likelihood of being transferred to an obstetric unit (if this is not the woman's chosen place of birth), the reasons why this might happen and the time it may take. Refer to Table 5 in the original guideline document if no local data are available. [new 2014]

If further discussion is wanted by either the midwife or the woman about the choice of planned place of birth, arrange this with a consultant midwife or supervisor of midwives, and/or a consultant obstetrician if there are obstetric issues. [new 2014]

When discussing the woman's choice of place of birth with her, do not disclose personal views or judgements about her choices. [new 2014]

Medical Conditions and Other Factors That May Affect Planned Place of Birth

Use Tables 6, 7, 8 and 9 in the original guideline document as part of an assessment for a woman choosing her planned place of birth:

- Tables 6 and 7 show medical conditions or situations in which there is increased risk for the woman or baby during or shortly after labour, where care in an obstetric unit would be expected to reduce this risk.
- The factors listed in Tables 8 and 9 are not reasons in themselves for advising birth within an obstetric unit, but indicate that further consideration of birth setting may be required.
- Discuss these risks and the additional care that can be provided in the obstetric unit with the woman so that she can make an informed choice about planned place of birth. [2007, amended 2014]

Women's Experience in All Birth Settings

For all women giving birth in all birth settings, follow the principles in the NICE guideline Patient experience in adult NHS services: improving the experience of care for people using adult NHS services (NICE clinical guideline 138). [new 2014]

Providers, senior staff and all healthcare professionals should ensure that in all birth settings there is a culture of respect for each woman as an individual undergoing a significant and emotionally intense life experience, so that the woman is in control, is listened to and is cared for with compassion, and that appropriate informed consent is sought. [new 2014]

Senior staff should demonstrate, through their own words and behaviour, appropriate ways of relating to and talking about women and their birth companion(s), and of talking about birth and the choices to be made when giving birth. [new 2014]

One-to-One Care in All Birth Settings

Maternity services should:

- Provide a model of care that supports one-to-one care in labour for all women and
- Benchmark services and identify overstaffing or understaffing by using workforce planning models and/or woman-to-midwife ratios. [new 2014]

Service Organisation and Clinical Governance

Ensure that all women giving birth have timely access to an obstetric unit if they need transfer of care for medical reasons or because they request regional analgesia. [new 2014]

Commissioners and providers (this can also include networks of providers) should ensure that there are:

- Robust protocols in place for transfer of care between settings (see also 'General Principles for Transfer of Care')
- Clear local pathways for the continued care of women who are transferred from one setting to another, including:
  - When crossing provider boundaries
  - If the nearest obstetric or neonatal unit is closed to admissions or the local midwifery-led unit is full. [new 2014]

Commissioners and providers (this can also include networks of providers) should ensure that there are multidisciplinary clinical governance structures in place to enable the oversight of all birth settings. These structures should include, as a minimum, midwifery (including a supervisor of midwives), obstetric, anaesthetic and neonatal expertise, and adequately supported user representation. [new 2014]

Care Throughout Labour

Communication

Treat all women in labour with respect. Ensure that the woman is in control of and involved in what is happening to her, and recognise that the way in which care is given is key to this. To facilitate this, establish a rapport with the woman, ask her about her wants and expectations for labour, and be aware of the importance of tone and demeanour, and of the actual words used. Use this information to support and guide her through her labour. [2007]

To establish communication with the woman:

- Greet the woman with a smile and a personal welcome, establish her language needs, introduce yourself and explain your role in her care.
- Maintain a calm and confident approach so that your demeanour reassures the woman that all is going well.
- Knock and wait before entering the woman's room, respecting it as her personal space, and ask others to do the same.
- Ask how the woman is feeling and whether there is anything in particular she is worried about.
- If the woman has a written birth plan, read and discuss it with her.
- Assess the woman's knowledge of strategies for coping with pain and provide balanced information to find out which available approaches are acceptable to her.
- Encourage the woman to adapt the environment to meet her individual needs.
- Ask her permission before all procedures and observations, focusing on the woman rather than the technology or the documentation.
- Show the woman and her birth companion(s) how to summon help and reassure her that she may do so whenever and as often as she needs to. When leaving the room, let her know when you will return.
- Involve the woman in any handover of care to another professional, either when additional expertise has been brought in or at the end of a shift. [2007]

Mobilisation

Encourage and help the woman to move and adopt whatever positions she finds most comfortable throughout labour. [2007]

Support

Encourage the woman to have support from birth companion(s) of her choice. [2007]

Hygiene Measures

Tap water may be used if cleansing is required before vaginal examination. [2007]

Routine hygiene measures taken by staff caring for women in labour, including standard hand hygiene and single-use non-sterile gloves, are appropriate to reduce cross-contamination between women, babies and healthcare professionals. [2007]

Selection of protective equipment must[1] be based on an assessment of the risk of transmission of microorganisms to the woman, and the risk of contamination of the healthcare worker's clothing and skin by women's blood, body fluids, secretions or excretions (this recommendation is adapted from recommendations in the NGC summary of the NICE guideline Infection: prevention and control of healthcare-associated infections in primary and community care [NICE clinical guideline 139]). [2007, amended 2014]

[1]In accordance with current health and safety legislation (at the time of publication of NICE guideline CG139 [March 2012]): Health and Safety at Work Act 1974, Management of Health and Safety at Work Regulations 1999, Health and Safety Regulations 2002, Control of Substances Hazardous to Health Regulations 2002, Personal Protective Equipment Regulations 2002 and Health and Social Care Act 2008.

Latent First Stage of Labour

Definitions of the Latent and Established First Stages of Labour

For the purposes of this guideline, use the following definitions of labour:

- Latent first stage of labour – a period of time, not necessarily continuous, when:

    - There are painful contractions and
    - There is some cervical change, including cervical effacement and dilatation up to 4 cm.
- Established first stage of labour – when:
    - There are regular painful contractions and
    - There is progressive cervical dilatation from 4 cm. [2007]

Education and Early Assessment

Give all nulliparous women information antenatally about:

- What to expect in the latent first stage of labour
- How to work with any pain they experience
- How to contact their midwifery care team and what to do in an emergency. [new 2014]

Offer all nulliparous women antenatal education about the signs of labour, consisting of:

- How to differentiate between Braxton Hicks contractions and active labour contractions
- The expected frequency of contractions and how long they last
- Recognition of amniotic fluid ('waters breaking')
- Description of normal vaginal loss. [new 2014]

Consider an early assessment of labour by telephone triage provided by a dedicated triage midwife for all women. [new 2014]

Consider a face-to-face early assessment of labour for all low-risk nulliparous women, either:

- At home (regardless of planned place of birth) or
- In an assessment facility in her planned place of birth (midwifery-led unit or obstetric unit), comprising one-to-one midwifery care for at least 1 hour. [new 2014]

Include the following in any early or triage assessment of labour:

- Ask the woman how she is, and about her wishes, expectations and any concerns she has
- Ask the woman about the baby's movements, including any changes
- Give information about what the woman can expect in the latent first stage of labour and how to work with any pain she experiences
- Give information about what to expect when she accesses care
- Agree a plan of care with the woman, including guidance about who she should contact next and when
- Provide guidance and support to the woman's birth companion(s). [new 2014]

The triage midwife should document the guidance that she gives to the woman. [new 2014]

If a woman seeks advice or attends a midwifery-led unit or obstetric unit with painful contractions, but is not in established labour:

- Recognise that a woman may experience painful contractions without cervical change, and although she is described as not being in labour, she may well think of herself as being 'in labour' by her own definition
- Offer her individualised support, and analgesia if needed
- Encourage her to remain at or return home, unless doing so leads to a significant risk that she could give birth without a midwife present or become distressed. [new 2014]

Pain Relief

Advise the woman and her birth companion(s) that breathing exercises, immersion in water and massage may reduce pain during the latent first stage of labour. (See also 'Timing of Regional Analgesia.') [new 2014]

Do not offer or advise aromatherapy, yoga or acupressure for pain relief during the latent first stage of labour. If a woman wants to use any of these techniques, respect her wishes. [new 2014]

Initial Assessment

When performing an initial assessment of a woman in labour, listen to her story and take into account her preferences and her emotional and psychological needs. [new 2014]

Carry out an initial assessment to determine if midwifery-led care in any setting is suitable for the woman, irrespective of any previous plan. The assessment should comprise the following:

- Observations of the woman:
  - Review the antenatal notes (including all antenatal screening results) and discuss these with the woman.
  - Ask her about the length, strength and frequency of her contractions.
  - Ask her about any pain she is experiencing and discuss her options for pain relief.
  - Record her pulse, blood pressure and temperature, and carry out urinalysis.
  - Record if she has had any vaginal loss.
- Observations of the unborn baby:
  - Ask the woman about the baby's movements in the last 24 hours.
  - Palpate the woman's abdomen to determine the fundal height, the baby's lie, presentation, position, engagement of the presenting part, and frequency and duration of contractions.
- Auscultate the fetal heart rate for a minimum of 1 minute immediately after a contraction. Palpate the woman's pulse to differentiate between the heart rates of the woman and the baby.

In addition (see also recommendations in this section about conducting a vaginal exam):

- If there is uncertainty about whether the woman is in established labour, a vaginal examination may be helpful after a period of assessment, but is not always necessary.
- If the woman appears to be in established labour, offer a vaginal examination. [new 2014]

Transfer the woman to obstetric-led care, following the general principles for transfer of care described in 'General Principles for Transfer of Care,' if any of the following are observed on initial assessment:

- Observations of the woman:
  - Pulse over 120 beats/minute on 2 occasions 30 minutes apart
  - A single reading of either raised diastolic blood pressure of 110 mmHg or more or raised systolic blood pressure of 160 mmHg or more
  - Either raised diastolic blood pressure of 90 mmHg or more or raised systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 30 minutes apart
  - A reading of 2+ of protein on urinalysis and a single reading of either raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more)
  - Temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive readings 1 hour apart
  - Any vaginal blood loss other than a show
  - Rupture of membranes more than 24 hours before the onset of established labour (see 'Babies Born to Women with Prelabour Rupture of the Membranes at Term')
  - The presence of significant meconium (see 'Presence of Meconium').
  - Pain reported by the woman that differs from the pain normally associated with contractions
  - Any risk factors recorded in the woman's notes that indicate the need for obstetric led care.
- Observations of the unborn baby:
  - Any abnormal presentation, including cord presentation
  - Transverse or oblique lie
  - High (4/5–5/5 palpable) or free-floating head in a nulliparous woman
  - Suspected fetal growth restriction or macrosomia
  - Suspected anhydramnios or polyhydramnios
  - Fetal heart rate below 110 or above 160 beats/minute
  - A deceleration in fetal heart rate heard on intermittent auscultation
  - Reduced fetal movements in the last 24 hours reported by the woman

If none of these are observed, continue with midwifery-led care unless the woman requests transfer (see also recommendation in this section about cardiotocography on admission for low-risk women) [new 2014]

If any of the factors in the above recommendation are observed but birth is imminent, assess whether birth in the current location is preferable to transferring the woman to an obstetric unit and discuss this with the coordinating midwife. [new 2014]

When conducting a vaginal examination:

- Be sure that the examination is necessary and will add important information to the decision-making process
- Recognise that a vaginal examination can be very distressing for a woman, especially if she is already in pain, highly anxious and in an unfamiliar environment
- Explain the reason for the examination and what will be involved
- Ensure the woman's informed consent, privacy, dignity and comfort
- Explain sensitively the findings of the examination and any impact on the birth plan to the woman and her birth companion(s). [new 2014]

Measuring Fetal Heart Rate as Part of Initial Assessment

Auscultate the fetal heart rate at first contact with the woman in labour, and at each further assessment. [new 2014]

Auscultate the fetal heart rate for a minimum of 1 minute immediately after a contraction and record it as a single rate. [new 2014]

Palpate the maternal pulse to differentiate between maternal heart rate and fetal heart rate. [new 2014]

Record accelerations and decelerations if heard. [new 2014]

Do not perform cardiotocography on admission for low-risk women in suspected or established labour in any birth setting as part of the initial assessment. [new 2014]

Offer continuous cardiotocography if any of the risk factors listed in recommendation above about transferring a woman to obstetric-led care are identified on initial assessment, and explain to the woman why this is necessary. (See also 'Measuring Fetal Heart Rate.') [new 2014]

Offer cardiotocography if intermittent auscultation indicates possible fetal heart rate abnormalities, and explain to the woman why this is necessary. Remove the cardiotocograph if the trace is normal after 20 minutes. (See also 'Measuring Fetal Heart Rate.') [new 2014]

If fetal death is suspected despite the presence of an apparently recorded fetal heart rate, offer real-time ultrasound assessment to check fetal viability. [new 2014]

Ongoing Assessment

Transfer the woman to obstetric-led care (following the general principles for transfer of care described under 'General Principles for Transfer of Care') if any of the following are observed at any point, unless the risks of transfer outweigh the benefits:

- Observations of the woman:
  - Pulse over 120 beats/minute on 2 occasions 30 minutes apart
  - A single reading of either raised diastolic blood pressure of 110 mmHg or more or raised systolic blood pressure of 160 mmHg or more
  - Either raised diastolic blood pressure of 90 mmHg or more or raised systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 30 minutes apart
  - A reading of 2+ of protein on urinalysis and a single reading of either raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more)
  - Temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive occasions 1 hour apart
  - Any vaginal blood loss other than a show
  - The presence of significant meconium (see 'Presence of Meconium')
  - Pain reported by the woman that differs from the pain normally associated with contractions
  - Confirmed delay in the first or second stage of labour
  - Request by the woman for additional pain relief using regional analgesia
  - Obstetric emergency – including antepartum haemorrhage, cord prolapse, postpartum haemorrhage, maternal seizure or collapse, or a need for advanced neonatal resuscitation
  - Retained placenta
  - Third-degree or fourth-degree tear or other complicated perineal trauma that needs suturing.
- Observations of the unborn baby:
  - Any abnormal presentation, including cord presentation
  - Transverse or oblique lie
  - High (4/5–5/5 palpable) or free-floating head in a nulliparous woman
  - Suspected fetal growth restriction or macrosomia
  - Suspected anhydramnios or polyhydramnios
  - Fetal heart rate below 110 or above 160 beats/minute

- A deceleration in fetal heart rate heard on intermittent auscultation.

If none of these are observed, continue with midwifery led care unless the woman requests transfer (see also 'Measuring Fetal Heart Rate as Part of Initial Assessment'). [new 2014]

Presence of Meconium

As part of ongoing assessment, document the presence or absence of significant meconium. This is defined as dark green or black amniotic fluid that is thick or tenacious, or any meconium-stained amniotic fluid containing lumps of meconium. [new 2014]

If significant meconium is present, ensure that:

- Healthcare professionals trained in fetal blood sampling are available during labour and
- Healthcare professionals trained in advanced neonatal life support are readily available for the birth. [2014]

If significant meconium is present, transfer the woman to obstetric-led care provided that it is safe to do so and the birth is unlikely to occur before transfer is completed. Follow the general principles for transfer of care described in 'General Principles for Transfer of Care.' [new 2014]

General Principles for Transfer of Care

Transfer of care refers to the transfer between midwifery-led care and obstetric-led care. This may or may not involve transport from one location to another. Women who are receiving midwifery-led care in an obstetric unit can have their care transferred to obstetric-led care without being moved.

Base any decisions about transfer of care on clinical findings, and discuss the options with the woman and her birth companion(s). [new 2014]

If contemplating transfer of care:

- Talk with the woman and her birth companion(s) about the reasons for this and what they can expect, including the time needed for transfer
- Address any concerns she has and try to allay her anxiety
- Ensure that her wishes are respected and her informed consent is obtained. [new 2014]

When arranging transfer of care, the midwife attending the labour should contact the ambulance service (if appropriate) and the coordinating midwife in the obstetric unit. The coordinating midwife should then alert the relevant healthcare professionals (obstetric, anaesthetic and neonatal). [new 2014]

When arranging transfer from one location to another, ensure the following:

- Before transfer, the woman is dressed, wrapped in a blanket or otherwise covered in a way that she feels is comfortable and appropriate.
- The woman is made to feel as comfortable as possible before and during transfer.
- Any ambulance staff or other personnel involved are aware that some positions may make the woman uncomfortable or afraid and could affect her labour, so she should be encouraged to choose how to move and what position to adopt if possible, in accordance with ambulance service protocols.
- Communication and companionship are maintained. Explain the arrangements for transfer to the woman and her birth companion(s). A midwife who has been involved in her care up to that point should travel with her and carry out a handover of care that involves the woman.
- Arrangements are in place to enable the woman's birth companion(s) to travel with her in the ambulance if that is what she wants. If this is not possible or not wanted, check that the birth companion(s) have or can arrange their own transport. [new 2014]

If a woman is transferred to an obstetric unit after the birth (see 'Care of the Woman After Birth'), ensure that her baby goes with her. [new 2014]

Care in Established Labour

Support in Labour

Provide a woman in established labour with supportive one-to-one care. [2007]

Do not leave a woman in established labour on her own except for short periods or at the woman's request. [2007]

Team midwifery (defined as a group of midwives providing care and taking shared responsibility for a group of women from the antenatal, through intrapartum to the postnatal period) is not recommended. [2007]

Controlling Gastric Acidity

Do not offer either H_2-receptor antagonists or antacids routinely to low-risk women. [2007]

Either H_2-receptor antagonists or antacids should be considered for women who receive opioids or who have or develop risk factors that make a general anaesthetic more likely. [2007]

Inform the woman that she may drink during established labour and that isotonic drinks may be more beneficial than water. [2007]

Inform the woman that she may eat a light diet in established labour unless she has received opioids or she develops risk factors that make a general anaesthetic more likely. [2007]

Pain Relief in Labour: Non-regional

Attitudes to Pain and Pain Relief in Childbirth

Healthcare professionals should think about how their own values and beliefs inform their attitude to coping with pain in labour and ensure their care supports the woman's choice. [2007]

Pain-relieving Strategies

If a woman chooses to use breathing and relaxation techniques in labour, support her in this choice. [2007]

If a woman chooses to use massage techniques in labour that have been taught to birth companions, support her in this choice. [2007]

Offer the woman the opportunity to labour in water for pain relief. [2007]

For women labouring in water, monitor the temperature of the woman and the water hourly to ensure that the woman is comfortable and not becoming pyrexial. The temperature of the water should not be above 37.5°C. [2007]

Keep baths and birthing pools clean using a protocol agreed with the microbiology department and, in the case of birthing pools, in accordance with the manufacturer's guidelines. [2007]

Do not use injected water papules. [2007]

Do not offer acupuncture, acupressure or hypnosis, but do not prevent women who wish to use these techniques from doing so. [2007]

Support the playing of music of the woman's choice in labour. [2007]

Non-pharmacological Analgesia

Do not offer transcutaneous electrical nerve stimulation (TENS) to women in established labour. [2007]

Inhalational Analgesia

Ensure that Entonox (a 50:50 mixture of oxygen and nitrous oxide) is available in all birth settings as it may reduce pain in labour, but inform the woman that it may make her feel nauseous and light-headed. [2007]

Intravenous and Intramuscular Opioids

Ensure that pethidine, diamorphine or other opioids are available in all birth settings. Inform the woman that these will provide limited pain relief during labour and may have significant side effects for both her (drowsiness, nausea and vomiting) and her baby (short-term respiratory depression and drowsiness which may last several days). [2007]

Inform the woman that pethidine, diamorphine or other opioids may interfere with breastfeeding. [2007]

If an intravenous or intramuscular opioid is used, also administer an antiemetic. [2007]

Women should not enter water (a birthing pool or bath) within 2 hours of opioid administration or if they feel drowsy. [2007]

Pain Relief in Labour: Regional Analgesia

Information About Regional Analgesia

If a woman is contemplating regional analgesia, talk with her about the risks and benefits and the implications for her labour, including the arrangements and time involved for transfer of care to an obstetric unit if she is at home or in a midwifery unit (follow the general principles for

transfer of care described in 'General Principles for Transfer of Care'). [2007, amended 2014]

Provide information about epidural analgesia, including the following:

- It is available only in obstetric units.
- It provides more effective pain relief than opioids.
- It is not associated with long-term backache.
- It is not associated with a longer first stage of labour or an increased chance of a caesarean birth.
- It is associated with a longer second stage of labour and an increased chance of vaginal instrumental birth.
- It will be accompanied by a more intensive level of monitoring and intravenous access, and so mobility may be reduced. [2007, amended 2014]

Timing of Regional Analgesia

If a woman in labour asks for regional analgesia, comply with her request. This includes women in severe pain in the latent first stage of labour. [2007]

Care and Observations for Women with Regional Analgesia

Always secure intravenous access before starting regional analgesia. [2007]

Preloading and maintenance fluid infusion need not be administered routinely before establishing low-dose epidural analgesia and combined spinal–epidural analgesia. [2007]

Undertake the following additional observations for women with regional analgesia:

- During establishment of regional analgesia or after further boluses (10 ml or more of low-dose solutions), measure blood pressure every 5 minutes for 15 minutes.
- If the woman is not pain-free 30 minutes after each administration of local anaesthetic/opioid solution, recall the anaesthetist.
- Assess the level of the sensory block hourly. [2007]

Encourage women with regional analgesia to move and adopt whatever upright positions they find comfortable throughout labour. [2007]

Once established, continue regional analgesia until after completion of the third stage of labour and any necessary perineal repair. [2007]

Upon confirmation of full cervical dilatation in a woman with regional analgesia, unless the woman has an urge to push or the baby's head is visible, pushing should be delayed for at least 1 hour and longer if the woman wishes, after which actively encourage her to push during contractions. [2007]

After diagnosis of full dilatation in a woman with regional analgesia, agree a plan with the woman in order to ensure that birth will have occurred within 4 hours regardless of parity. [2007]

Do not routinely use oxytocin in the second stage of labour for women with regional analgesia. [2007]

Perform continuous cardiotocography for at least 30 minutes during establishment of regional analgesia and after administration of each further bolus of 10 ml or more. [2007, amended 2014]

Establishing and Maintaining Regional Analgesia

Use either epidural or combined spinal–epidural analgesia for establishing regional analgesia in labour. [2007]

If rapid analgesia is required, use combined spinal–epidural analgesia. [2007]

Establish combined spinal–epidural analgesia with bupivacaine and fentanyl. [2007]

Establish epidural analgesia with a low-concentration local anaesthetic and opioid solution with, for example, 10–15 ml of 0.0625%–0.1% bupivacaine with 1–2 micrograms per ml fentanyl. The initial dose of local anaesthetic plus opioid is essentially a test dose, so administer cautiously to ensure that inadvertent intrathecal injection has not occurred. [2007]

Use low-concentration local anaesthetic and opioid solutions (0.0625%–0.1% bupivacaine or equivalent combined with 2.0 micrograms per ml fentanyl) for maintaining epidural analgesia in labour. [2007]

Do not use high concentrations of local anaesthetic solutions (0.25% or above of bupivacaine or equivalent) routinely for either establishing or maintaining epidural analgesia. [2007]

Either patient-controlled epidural analgesia or intermittent bolus given by healthcare professionals are the preferred modes of administration for maintenance of epidural analgesia. [2007]

Monitoring During Labour

Measuring Fetal Heart Rate

Offer intermittent auscultation of the fetal heart rate to low-risk women in established first stage of labour in all birth settings:

- Use either a Pinard stethoscope or Doppler ultrasound.
- Carry out intermittent auscultation immediately after a contraction for at least 1 minute, at least every 15 minutes, and record it as a single rate.
- Record accelerations and decelerations if heard.
- Palpate the maternal pulse if a fetal heart rate abnormality is suspected, to differentiate between the two heart rates. [new 2014]

Do not perform cardiotocography for low-risk women in established labour. [new 2014]

Advise continuous cardiotocography if any of the following risk factors are present or arise during labour:

- Suspected chorioamnionitis or sepsis, or a temperature of 38°C or above
- Severe hypertension (160/110 mmHg or above [see the NICE guideline Hypertension in pregnancy. The management of hypertensive disorders during pregnancy (NICE clinical guideline 107)])
- Oxytocin use
- The presence of significant meconium (see 'Presence of Meconium')
- Fresh vaginal bleeding that develops in labour. [new 2014]

If any one of the following risk factors is present or arises during labour, perform a full assessment of all factors listed under 'Ongoing Assessment':

- Prolonged period since rupture of membranes (24 hours or more [see 'Prelabour Rupture of Membranes at Term'])
- Moderate hypertension (150/100 to 159/109 mmHg [see the NICE guideline Hypertension in pregnancy. The management of hypertensive disorders during pregnancy (NICE clinical guideline 107)])
- Confirmed delay in the first or second stage of labour (see 'Delay in the First Stage' and 'Delay in the Second Stage')
- The presence of non-significant meconium

Advise continuous cardiotocography if 2 or more of the above risk factors are present, or any other risk factor in the list found under 'Ongoing Assessment') is present with 1 of these. [new 2014]

Do not regard amniotomy alone for suspected delay in the established first stage of labour as an indication to start continuous cardiotocography. [2007, amended 2014]

Address any concerns that the woman has about continuous cardiotocography, and give her the following information:

- Explain that continuous cardiotocography is used to monitor the baby's heartbeat and the labour contractions.
- Give details of the types of findings that may occur. Explain that a normal trace is reassuring and indicates that the baby is coping well with labour, but if the trace is not normal there is less certainty about the condition of the baby and further continuous monitoring will be advised.
- Explain that decisions about whether to take any further action will be based on an assessment of several factors, including the findings from cardiotocography. [new 2014]

If continuous cardiotocography has been used because of concerns arising from intermittent auscultation but there are no non-reassuring or abnormal features (see Table 10 in the original guideline document) on the cardiotocograph trace after 20 minutes, remove the cardiotocograph and return to intermittent auscultation. [new 2014]

Telemetry

Offer telemetry to any woman who needs continuous cardiotocography during labour. [new 2014]

Interpretation of Cardiotocograph Traces

Use tables 10 and 11 in the original guideline document to define and interpret cardiotocograph traces and to guide the management of labour for women who are having continuous cardiotocography. These tables include and summarise individual recommendations about fetal monitoring (see 'Overall Care,' 'Baseline Fetal Heart,' 'Baseline Variability,' 'Decelerations,' and 'Accelerations') fetal scalp stimulation (see 'Response to Fetal Scalp Stimulation'), fetal blood sampling (see 'Fetal Blood Sampling' and 'When a Fetal Blood Sample Cannot Be Obtained') and intrauterine resuscitation (see 'Conservative Measures' and 'Intrauterine Resuscitation') in this guideline. [new 2014]

Overall Care

If continuous cardiotocography is needed:

- Explain to the woman that it will restrict her mobility, particularly if conventional monitoring is used
- Encourage and help the woman to be as mobile as possible and to change position as often as she wishes
- Remain with the woman in order to continue providing one-to-one support
- Monitor the condition of the woman and the baby, and take prompt action if required
- Ensure that the focus of care remains on the woman rather than the cardiotocograph trace ensure that the cardiotocograph trace is of high quality, and think about other options if this is not the case
- Bear in mind that it is not possible to categorise or interpret every cardiotocograph trace; senior obstetric input is important in these cases. [new 2014]

Do not make any decision about a woman's care in labour on the basis of cardiotocography findings alone. [new 2014]

Any decision about changes to a woman's care in labour when she is on a cardiotocograph monitor should also take into account the following:

- The woman's report of how she is feeling
- The woman's report of the baby's movements
- Assessment of the woman's wellbeing and behaviour
- The woman's temperature, pulse and blood pressure
- Whether there is meconium or blood in the amniotic fluid
- Any signs of vaginal bleeding
- Any medication the woman is taking
- The frequency of contractions
- The stage and progress of labour
- The woman's parity
- The results of fetal blood sampling if undertaken (see 'Fetal Blood Sampling' and 'When a Fetal Blood Sample Cannot Be Obtained')
- The fetal response to scalp stimulation if performed (see 'Response to Fetal Scalp Stimulation'). [new 2014]

When reviewing the cardiotocograph trace, assess and document all 4 features (baseline fetal heart rate, baseline variability, presence or absence of decelerations, and presence of accelerations). [new 2014]

Supplement ongoing care with a documented systematic assessment of the condition of the woman and unborn baby (including any cardiotocography findings) every hour. If there are concerns about cardiotocography findings, undertake this assessment more frequently. [new 2014]

Be aware that if the cardiotocography parameters of baseline fetal heart rate and baseline variability are normal, the risk of fetal acidosis is low. [new 2014]

Baseline Fetal Heart Rate

Take the following into account when assessing baseline fetal heart rate:

- This will usually be between 110 and 160 beats/minute
- A baseline fetal heart rate between 100 and 109 beats/minute (having confirmed that this is not the maternal heart rate) with normal baseline variability and no variable or late decelerations is normal and should not prompt further action
- A stable baseline fetal heart rate between 90 and 99 beats/minute with normal baseline variability (having confirmed that this is not the maternal heart rate) may be a normal variation; obtain a senior obstetric opinion if uncertain. [new 2014]

If the baseline fetal heart rate is between 161 and 180 beats/minute with no other non-reassuring or abnormal features on the cardiotocograph:

- Think about possible underlying causes (such as infection) and appropriate investigation

- Check the woman's temperature and pulse; if either are raised, offer fluids and paracetamol
- Start one or more conservative measures (see recommendation entitled "Conservative Measures). [new 2014]

If the baseline fetal heart rate is between 161 and 180 beats/minute with no other non-reassuring or abnormal features on the cardiotocograph and the woman's temperature and pulse are normal, continue cardiotocography and normal care, since the risk of fetal acidosis is low. [new 2014]

If the baseline fetal heart rate is between 100 and 109 beats/minute or above 160 beats/minute and there is 1 other non-reassuring feature on the cardiotocograph, start conservative measures (see 'Conservative Measures') to improve fetal wellbeing. [new 2014]

If the baseline fetal heart rate is above 180 beats/minute with no other non-reassuring or abnormal features on the cardiotocograph:

- Think about possible underlying causes (such as infection) and appropriate investigation
- Check the woman's temperature and pulse; if either are raised, offer fluids and paracetamol
- Start one or more conservative measures (see 'Conservative Measures')
- Offer fetal blood sampling to measure lactate or pH (see 'Fetal Blood Sampling' and 'When a Fetal Blood Sample Cannot Be Obtained') if the rate stays above 180 beats/minute despite conservative measures. [new 2014]

If there is a bradycardia or a single prolonged deceleration with the fetal heart rate below 100 beats/minute for 3 minutes or more:

- Start conservative measures (see 'Conservative Measures')
- Urgently seek obstetric help
- Make preparations for urgent birth
- Expedite the birth (see 'Expediting Birth') if the bradycardia persists for 9 minutes

If the fetal heart rate recovers at any time up to 9 minutes, reassess any decision to expedite the birth, in discussion with the woman. [new 2014]

Baseline Variability

Take the following into account when assessing fetal heart rate baseline variability:

- Baseline variability will usually be 5 beats/minute or more
- Intermittent periods of reduced baseline variability are normal, especially during periods of quiescence ('sleep')
- Mild or minor pseudo-sinusoidal patterns (oscillations of amplitude 5–15 beats/minute) are of no significance. [new 2014]

If there is reduced baseline variability of less than 5 beats/minute with a normal baseline fetal heart rate and no variable or late decelerations:

- Start conservative measures (see 'Conservative Measures') if this persists for over 30 minutes
- Offer fetal blood sampling to measure lactate or pH (see 'Fetal Blood Sampling' and 'When a Fetal Blood Sample Cannot Be Obtained') if it persists for over 90 minutes. [new 2014]

If there is reduced baseline variability of less than 5 beats/minute for over 30 minutes together with 1 or more of tachycardia (baseline fetal heart rate above 160 beats/minute), a baseline fetal heart rate below 100 beats/minute or variable or late decelerations:

- Start conservative measures (see 'Conservative Measures') and
- Offer fetal blood sampling to measure lactate or pH (see 'Fetal Blood Sampling' and 'When a Fetal Blood Sample Cannot be Obtained'). [new 2014]

Decelerations

When describing decelerations in fetal heart rate, specify:

- The depth and duration of the individual decelerations
- Their timing in relation to the peaks of the contractions
- Whether or not the fetal heart rate returns to baseline
- How long they have been present for
- Whether they occur with over 50% of contractions. [new 2014]

Describe decelerations as 'early', 'variable' or 'late'. Do not use the terms 'typical' and 'atypical' because they can cause confusion. [new 2014]

Take the following into account when assessing decelerations in fetal heart rate:

- Early decelerations are uncommon, benign and usually associated with head compression
- Early decelerations with no non-reassuring or abnormal features on the cardiotocograph trace should not prompt further action. [new 2014]

If variable decelerations are observed that begin with the onset of a contraction:

- Be aware that these are very common, can be a normal feature in an otherwise uncomplicated labour and birth, and are usually a result of cord compression
- Think about asking the woman to change position or mobilise. [new 2014]

Start conservative measures (see 'Conservative Measures') if variable decelerations are observed with a normal baseline fetal heart rate and normal baseline variability that are:

- Dropping from baseline by 60 beats/minute or less and taking 60 seconds or less to recover
- Present for over 90 minutes
- Occurring with over 50% of contractions. [new 2014]

Start conservative measures (see 'Conservative Measures') if variable decelerations are observed with a normal baseline fetal heart rate and normal baseline variability that are:

- Dropping from baseline by more than 60 beats/minute or taking over 60 seconds to recover
- Present for up to 30 minutes
- Occurring with over 50% of contractions. [new 2014]

Offer fetal blood sampling to measure lactate or pH (see 'Fetal Blood Sampling' and 'When a Fetal Blood Sample Cannot Be Obtained') if non-reassuring variable decelerations (see 'Decelerations') are:

- Still observed 30 minutes after starting conservative measures or
- Accompanied by tachycardia (baseline fetal heart rate above 160 beats/minute) and/or reduced baseline variability (less than 5 beats/minute). [new 2014]

If late decelerations (decelerations that start after a contraction and often have a slow return to baseline) are observed:

- Start conservative measures (see 'Conservative Measures') if the late decelerations occur with over 50% of contractions
- Offer fetal blood sampling to measure lactate or pH (see 'Fetal Blood Sampling' and 'When a Fetal Blood Sample Cannot Be Obtained') and/or expedite the birth (see 'Expediting Birth') if the late decelerations persist for over 30 minutes and occur with over 50% of contractions
- Take action sooner if the late decelerations are accompanied by an abnormal baseline fetal heart rate and/or reduced baseline variability. [new 2014]

Take into account that the longer, the later and the deeper the individual decelerations, the more likely the presence of fetal acidosis (particularly if the decelerations are accompanied by tachycardia and/or reduced baseline variability), and take action sooner than 30 minutes if there is concern about fetal wellbeing. [new 2014]

Accelerations

Take the following into account when assessing accelerations in fetal heart rate:

- The presence of fetal heart rate accelerations is generally a sign that the baby is healthy
- The absence of accelerations in an otherwise normal cardiotocograph trace does not indicate acidosis. [new 2014]

Conservative Measures

If there are any concerns about the baby's wellbeing, think about the possible underlying causes and start one or more of the following conservative measures based on an assessment of the most likely cause(s):

- Encourage the woman to mobilise or adopt a left-lateral position, and in particular to avoid being supine
- Offer oral or intravenous fluids
- Offer paracetamol if the woman has a raised temperature
- Reduce contraction frequency by:
    - Stopping oxytocin if it is being used (the consultant obstetrician should decide whether and when to restart oxytocin) and/or

- Offering a tocolytic drug (a suggested regimen is subcutaneous terbutaline 0.25 mg). [new 2014]

Inform the coordinating midwife and an obstetrician whenever conservative measures are implemented. [new 2014]

Do not use maternal facial oxygen therapy for intrauterine fetal resuscitation, because it may harm the baby (but it can be used where it is administered for maternal indications such as hypoxia or as part of preoxygenation before a potential anaesthetic). [new 2014]

Intrauterine Resuscitation

Do not offer amnioinfusion for intrauterine fetal resuscitation. [new 2014]

Response to Fetal Scalp Stimulation

If fetal scalp stimulation leads to an acceleration in fetal heart rate, regard this as a reassuring feature. Take this into account when reviewing the whole clinical picture (see 'Overall Care'). [new 2014]

Use the fetal heart rate response after fetal scalp stimulation during a vaginal examination to elicit information about fetal wellbeing if fetal blood sampling is unsuccessful or contraindicated. [new 2014]

Fetal Blood Sampling

When offering fetal blood sampling, explain the following to the woman:

- Why the test is being advised.
- The blood sample will be used to measure the level of acid in the baby's blood, to see how well the baby is coping with labour.
- The procedure will require her to have a vaginal examination using a small device similar to a speculum.
- A sample of blood will be taken from the baby's head by making a small scratch on the baby's scalp. This will heal quickly after birth, but there is a small risk of infection.
- The procedure can help to reduce the need for further, more serious interventions.
- What the different outcomes of the test may be (normal, borderline and abnormal) and the actions that will follow each result.
- There is a small chance that it will not be possible to obtain a blood sample (especially if the cervix is less than 4 cm dilated). If a sample cannot be obtained, a caesarean section or instrumental birth (forceps or ventouse) may be needed because otherwise it is not possible to find out how well the baby is coping. [new 2014]

Do not carry out fetal blood sampling if any contraindications are present, including risk of maternal-to-fetal transmission of infection or risk of fetal bleeding disorders. [new 2014]

Take fetal blood samples with the woman in the left-lateral position. [2014]

Measure either lactate or pH when performing fetal blood sampling. Measure lactate if the necessary equipment and suitably trained staff are available; otherwise measure pH. [new 2014]

Use the classification of fetal blood sample results shown in Table 12 in the original guideline document. [new 2014]

Interpret fetal blood sample results taking into account any previous lactate or pH measurement, the rate of progress in labour and the clinical features of the woman and baby. [new 2014]

Inform the consultant obstetrician if any fetal blood sample result is abnormal. [new 2014]

Discuss with the consultant obstetrician if:

- A fetal blood sample cannot be obtained or
- A third fetal blood sample is thought to be needed. [new 2014]

If the fetal blood sample result is normal, offer repeat sampling no more than 1 hour later if this is still indicated by the cardiotocograph trace, or sooner if additional non-reassuring or abnormal features are seen. [2014]

If the fetal blood sample result is borderline, offer repeat sampling no more than 30 minutes later if this is still indicated by the cardiotocograph trace, or sooner if additional non-reassuring or abnormal features are seen. [2014]

Take into account the time needed to take a fetal blood sample when planning repeat sampling. [2014]

If the cardiotocograph trace remains unchanged and the fetal blood sample result is stable (that is, lactate or pH is unchanged) after a second test, further samples may be deferred unless additional non-reassuring or abnormal features are seen. [new 2014]

When a Fetal Blood Sample Cannot Be Obtained

If a fetal blood sample is indicated and the sample cannot be obtained, but the associated scalp stimulation results in fetal heart rate accelerations, decide whether to continue the labour or expedite the birth in light of the clinical circumstances and in discussion with the consultant obstetrician and the woman. [new 2014]

If a fetal blood sample is indicated but a sample cannot be obtained and there is no improvement in the cardiotocograph trace, advise the woman that the birth should be expedited (see 'Expediting Birth'). [new 2014]

Record Keeping

To ensure accurate record keeping for cardiotocography:

- Make sure that date and time clocks on the cardiotocograph monitor are set correctly
- Label traces with the woman's name, date of birth and hospital number or National Health Service (NHS) number, the date and the woman's pulse at the start of monitoring. [new 2014]

Individual units should develop a system for recording relevant intrapartum events (for example, vaginal examination, fetal blood sampling and siting of an epidural) in standard notes and/or on the cardiotocograph trace. [new 2014]

Keep cardiotocograph traces for 25 years and, if possible, store them electronically. [2007, amended 2014]

In cases where there is concern that the baby may experience developmental delay, photocopy cardiotocograph traces and store them indefinitely in case of possible adverse outcomes. [2007, amended 2014]

Ensure that tracer systems are available for all cardiotocograph traces if stored separately from the woman's records. [2007, amended 2014]

Develop tracer systems to ensure that cardiotocograph traces removed for any purpose (such as risk management or for teaching purposes) can always be located. [2007, amended 2014]

Prelabour Rupture of Membranes at Term

Do not carry out a speculum examination if it is certain that the membranes have ruptured. [2007]

If it is uncertain whether prelabour rupture of the membranes has occurred, offer the woman a speculum examination to determine whether the membranes have ruptured. Avoid digital vaginal examination in the absence of contractions. [2007]

Advise women presenting with prelabour rupture of the membranes at term that:

- The risk of serious neonatal infection is 1%, rather than 0.5% for women with intact membranes
- 60% of women with prelabour rupture of the membranes will go into labour within 24 hours
- Induction of labour (the care of women who have their labour induced is covered by the NGC summary of the NICE guideline Induction of labour [NICE clinical guideline 70]) is appropriate approximately 24 hours after rupture of the membranes. [2007]

Until the induction is started or if expectant management beyond 24 hours is chosen by the woman:

- Do not offer lower vaginal swabs and measurement of maternal C-reactive protein
- To detect any infection that may be developing, advise the woman to record her temperature every 4 hours during waking hours and to report immediately any change in the colour or smell of her vaginal loss
- Inform the woman that bathing or showering is not associated with an increase in infection, but that having sexual intercourse may be. [2007]

Assess fetal movement and heart rate at initial contact and then every 24 hours after rupture of the membranes while the woman is not in labour, and advise the woman to report immediately any decrease in fetal movements. [2007]

If labour has not started 24 hours after rupture of the membranes, advise the woman to give birth where there is access to neonatal services and to stay in hospital for at least 12 hours after the birth. [2007]

First Stage of Labour

See 'Definitions of the Latent and Established First Stages of Labour' for the definition of the first stage of labour.

Do not offer or advise clinical intervention if labour is progressing normally and the woman and baby are well. [2007]

In all stages of labour, women who have left the normal care pathway because of the development of complications can return to it if/when the complication is resolved. [2007]

Duration of the First Stage

Inform women that, while the length of established first stage of labour varies between women:

- First labours last on average 8 hours and are unlikely to last over 18 hours
- Second and subsequent labours last on average 5 hours and are unlikely to last over 12 hours. [2007]

Observations During the Established First Stage

Do not routinely use verbal assessment using a numerical pain score. [2007]

Use a pictorial record of labour (partogram) once labour is established. [2007]

Where the partogram includes an action line, use the World Health Organization recommendation of a 4-hour action line.[2] [2007]

Record the following observations during the first stage of labour:

- Half-hourly documentation of frequency of contractions
- Hourly pulse
- 4-hourly temperature and blood pressure
- Frequency of passing urine
- Offer a vaginal examination (see 'Initial Assessment') 4-hourly or if there is concern about progress or in response to the woman's wishes (after abdominal palpation and assessment of vaginal loss). [2007]

If any of the indications for transfer are met (see 'Initial Assessment'), transfer the woman to obstetric-led care. Follow the general principles for transfer of care described in 'General Principles for Transfer of Care'. [new 2014]

Give ongoing consideration to the woman's emotional and psychological needs, including her desire for pain relief. [2007]

Encourage the woman to communicate her need for analgesia at any point during labour. [2007]

[2]Anonymous (1994) World Health Organization partograph in management of labour. World Health Organization Maternal Health and Safe Motherhood Programme. Lancet 343: 1399–404. See also the WHO Multicountry Survey on Maternal and Newborn Health.

Possible Routine Interventions in the First Stage

Do not routinely offer the package known as active management of labour (one-to-one continuous support; strict definition of established labour; early routine amniotomy; routine 2-hourly vaginal examination; oxytocin if labour becomes slow). [2007]

In normally progressing labour, do not perform amniotomy routinely. [2007]

Do not use combined early amniotomy with use of oxytocin routinely. [2007]

Delay in the First Stage

If delay in the established first stage is suspected, take the following into account:

- Parity
- Cervical dilatation and rate of change
- Uterine contractions
- Station and position of presenting part
- The woman's emotional state
- Referral to the appropriate healthcare professional

Offer the woman support, hydration, and appropriate and effective pain relief. [2007]

If delay in the established first stage is suspected, assess all aspects of progress in labour when diagnosing delay, including:

- Cervical dilatation of less than 2 cm in 4 hours for first labours
- Cervical dilatation of less than 2 cm in 4 hours or a slowing in the progress of labour for second or subsequent labours
- Descent and rotation of the baby's head
- Changes in the strength, duration and frequency of uterine contractions. [2007]

If delay is diagnosed, transfer the woman to obstetric-led care. Follow the general principles for transfer of care described in 'General Principles for Transfer of Care.' [new 2014]

If delay in the established first stage of labour is suspected, amniotomy should be considered for all women with intact membranes, after explanation of the procedure and advice that it will shorten her labour by about an hour and may increase the strength and pain of her contractions. [2007]

Whether or not a woman has agreed to an amniotomy, advise all women with suspected delay in the established first stage of labour to have a vaginal examination 2 hours later, and diagnose delay if progress is less than 1 cm. [2007]

For women with intact membranes in whom delay in the established first stage of labour is confirmed, advise the woman to have an amniotomy, and to have a repeat vaginal examination 2 hours later whether her membranes are ruptured or intact. [2007]

For all women with confirmed delay in the established first stage of labour:

- Transfer the woman to obstetric-led care for an obstetric review and a decision about management options, including the use of oxytocin (follow the general principles for transfer of care described in 'General Principles for Transfer of Care') [new 2014]
- Explain to her that using oxytocin after spontaneous or artificial rupture of the membranes will bring forward the time of birth but will not influence the mode of birth or other outcomes. [2007]

For a multiparous woman with confirmed delay in the established first stage of labour, an obstetrician should perform a full assessment, including abdominal palpation and vaginal examination, before a decision is made about using oxytocin. [2007]

Offer all women with delay in the established first stage of labour support and effective pain relief. [2007]

Inform the woman that oxytocin will increase the frequency and strength of her contractions and that its use will mean that her baby should be monitored continuously. Offer the woman an epidural before oxytocin is started. [2007]

If oxytocin is used, ensure that the time between increments of the dose is no more frequent than every 30 minutes. Increase oxytocin until there are 4–5 contractions in 10 minutes. (See 'Measuring Fetal Heartbeat.') [2007]

Advise the woman to have a vaginal examination 4 hours after starting oxytocin in established labour:

- If cervical dilatation has increased by less than 2 cm after 4 hours of oxytocin, further obstetric review is required to assess the need for caesarean section.
- If cervical dilatation has increased by 2 cm or more, advise 4-hourly vaginal examinations. [2007]

Second Stage of Labour

Definition of the Second Stage

For the purposes of this guideline, use the following definitions of labour:

- Passive second stage of labour:
  - The finding of full dilatation of the cervix before or in the absence of involuntary expulsive contractions.
- Onset of the active second stage of labour:
  - The baby is visible
  - Expulsive contractions with a finding of full dilatation of the cervix or other signs of full dilatation of the cervix
  - Active maternal effort following confirmation of full dilatation of the cervix in the absence of expulsive contractions. [2007]

Observations During the Second Stage

Carry out the following observations in the second stage of labour, record all observations on the partogram and assess whether transfer of care may be needed (see 'Ongoing Assessment') [2007, amended 2014]:

- Half-hourly documentation of the frequency of contractions [2007]
- Hourly blood pressure [2007]
- Continued 4-hourly temperature [2007]
- Frequency of passing urine [2007]
- Offer a vaginal examination (see 'Ongoing Assessment') hourly in the active second stage, or in response to the woman's wishes (after abdominal palpation and assessment of vaginal loss). [2007]
  In addition:

- Continue to take the woman's emotional and psychological needs into account. [2007]
- Assess progress, which should include the woman's behaviour, the effectiveness of pushing and the baby's wellbeing, taking into account the baby's position and station at the onset of the second stage. These factors will assist in deciding the timing of further vaginal examination and any need for transfer to obstetric led care. [2007, amended 2014]
- Perform intermittent auscultation of the fetal heart rate immediately after a contraction for at least 1 minute, at least every 5 minutes. Palpate the woman's pulse every 15 minutes to differentiate between the two heart rates. [2007, amended 2014]
- Ongoing consideration should be given to the woman's position, hydration, coping strategies and pain relief throughout the second stage. [2007]

Duration of the Second Stage and Definition of Delay

For a nulliparous woman:

- Birth would be expected to take place within 3 hours of the start of the active second stage in most women
- Diagnose delay in the active second stage when it has lasted 2 hours and refer the woman to a healthcare professional trained to undertake an operative vaginal birth if birth is not imminent. [2007]

For a multiparous woman:

- Birth would be expected to take place within 2 hours of the start of the active second stage in most women
- Diagnose delay in the active second stage when it has lasted 1 hour and refer the woman to a healthcare professional trained to undertake an operative vaginal birth if birth is not imminent. [2007]

For a nulliparous woman, suspect delay if progress (in terms of rotation and/or descent of the presenting part) is inadequate after 1 hour of active second stage. Offer vaginal examination and then offer amniotomy if the membranes are intact. [2007, amended 2014]

For a multiparous woman, suspect delay if progress (in terms of rotation and/or descent of the presenting part) is inadequate after 30 minutes of active second stage. Offer vaginal examination and then offer amniotomy if the membranes are intact. [new 2014]

If full dilatation of the cervix has been confirmed in a woman without regional analgesia, but she does not get an urge to push, carry out further assessment after 1 hour. [2007]

Oxytocin in the Second Stage

Consideration should be given to the use of oxytocin, with the offer of regional analgesia, for nulliparous women if contractions are inadequate at the onset of the second stage. [2007]

The Woman's Position and Pushing in the Second Stage

Discourage the woman from lying supine or semi-supine in the second stage of labour and encourage her to adopt any other position that she finds most comfortable. [2007]

Inform the woman that in the second stage she should be guided by her own urge to push. [2007]

If pushing is ineffective or if requested by the woman, offer strategies to assist birth, such as support, change of position, emptying of the bladder and encouragement. [2007]

Intrapartum Interventions to Reduce Perineal Trauma

Do not perform perineal massage in the second stage of labour. [2007]

Either the 'hands on' (guarding the perineum and flexing the baby's head) or the 'hands poised' (with hands off the perineum and baby's head but in readiness) technique can be used to facilitate spontaneous birth. [2007]

Do not offer lidocaine spray to reduce pain in the second stage of labour. [2007]

Do not carry out a routine episiotomy during spontaneous vaginal birth. [2007]

Inform any woman with a history of severe perineal trauma that her risk of repeat severe perineal trauma is not increased in a subsequent birth, compared with women having their first baby. [2007]

Do not offer episiotomy routinely at vaginal birth after previous third- or fourth-degree trauma. [2007]

In order for a woman who has had previous third- or fourth-degree trauma to make an informed choice, talk with her about the future mode of birth, encompassing:

- Current urgency or incontinence symptoms
- The degree of previous trauma
- Risk of recurrence
- The success of the repair undertaken
- The psychological effect of the previous trauma
- Management of her labour. [2007]

Inform any woman with infibulated genital mutilation of the risks of difficulty with vaginal examination, catheterisation and application of fetal scalp electrodes. Inform her of the risks of delay in the second stage and spontaneous laceration together with the need for an anterior episiotomy and the possible need for defibulation in labour. [2007]

If an episiotomy is performed, the recommended technique is a mediolateral episiotomy originating at the vaginal fourchette and usually directed to the right side. The angle to the vertical axis should be between 45 and 60 degrees at the time of the episiotomy. [2007]

Perform an episiotomy if there is a clinical need, such as instrumental birth or suspected fetal compromise. [2007]

Provide tested effective analgesia before carrying out an episiotomy, except in an emergency because of acute fetal compromise. [2007]

Water Birth

Inform women that there is insufficient high-quality evidence to either support or discourage giving birth in water. [2007]

Delay in the Second Stage

If there is delay in the second stage of labour, or if the woman is excessively distressed, support and sensitive encouragement and the woman's need for analgesia/anaesthesia are particularly important. [2007]

An obstetrician should assess a woman with confirmed delay in the second stage (after transfer to obstetric-led care, following the general principles for transfer of care described in 'General Principles for Transfer of Care') before contemplating the use of oxytocin. [new 2014]

After initial obstetric assessment of a woman with delay in the second stage, maintain ongoing obstetric review every 15–30 minutes. [2007]

Instrumental Birth and Delayed Second Stage

Think about offering instrumental birth if there is concern about the baby's wellbeing or there is a prolonged second stage. [2007]

Recognise that, on rare occasions, the woman's need for help in the second stage may be an indication to assist by offering instrumental birth when supportive care has not helped. [2007]

The choice of instrument depends on a balance of clinical circumstance and practitioner experience. [2007]

Because instrumental birth is an operative procedure, advise the woman to have tested effective anaesthesia. [2007]

If a woman declines anaesthesia, offer a pudendal block combined with local anaesthetic to the perineum during instrumental birth. [2007]

If there is concern about fetal compromise, offer either tested effective anaesthesia or, if time does not allow this, a pudendal block combined with local anaesthetic to the perineum during instrumental birth. [2007]

Advise the woman to have a caesarean section if vaginal birth is not possible (see the NGC summary of the NICE guideline Caesarean section [NICE clinical guideline 132]). [2007]

Expediting Birth

If the birth needs to be expedited for maternal or fetal reasons, assess both the risk to the baby and the safety of the woman. Assessments should include:

- The degree of urgency
- Clinical findings on abdominal and vaginal examination
- Choice of mode of birth (and whether to use forceps or ventouse if an instrumental birth is indicated)
- Anticipated degree of difficulty, including the likelihood of success if instrumental birth is attempted
- Location
- Any time that may be needed for transfer to obstetric-led care
- The need for additional analgesia or anaesthesia
- The woman's preferences. [new 2014]

Talk with the woman and her birth companion(s) about why the birth needs to be expedited and what the options are. [new 2014]

Inform the team about the degree of urgency. [new 2014]

Record the time at which the decision to expedite the birth is made. [new 2014]

Third Stage of Labour

Recognise that the time immediately after the birth is when the woman and her birth companion(s) are meeting and getting to know the baby. Ensure that any care or interventions are sensitive to this and minimise separation or disruption of the mother and baby. [new 2014]

Definition of the Third Stage

For the purposes of this guideline, use the following definitions:

- The third stage of labour is the time from the birth of the baby to the expulsion of the placenta and membranes.
- Active management of the third stage involves a package of care comprising the following components:
  - Routine use of uterotonic drugs
  - Deferred clamping and cutting of the cord
  - Controlled cord traction after signs of separation of the placenta.
- Physiological management of the third stage involves a package of care that includes the following components:
  - No routine use of uterotonic drugs
  - No clamping of the cord until pulsation has stopped
  - Delivery of the placenta by maternal effort. [new 2014]

Prolonged Third Stage

Diagnose a prolonged third stage of labour if it is not completed within 30 minutes of the birth with active management or within 60 minutes of the birth with physiological management. Follow recommendations under 'Retained Placenta' on managing a retained placenta. [new 2014]

Observations in the Third Stage

Record the following observations for a woman in the third stage of labour:

- Her general physical condition, as shown by her colour, respiration and her own report of how she feels
- Vaginal blood loss. [new 2014]

If there is postpartum haemorrhage, a retained placenta or maternal collapse, or any other concerns about the woman's wellbeing:

- Transfer her to obstetric-led care (following the general principles for transfer of care described in 'General Principles for Transfer of Care')
- Carry out frequent observations to assess whether resuscitation is needed. [new 2014]

Active and Physiological Management of the Third Stage

Explain to the woman antenatally about what to expect with each package of care for managing the third stage of labour and the benefits and risks associated with each. [new 2014]

Explain to the woman that active management:

- Shortens the third stage compared with physiological management
- Is associated with nausea and vomiting in about 100 in 1000 women
- Is associated with an approximate risk of 13 in 1000 of a haemorrhage of more than 1 litre
- Is associated with an approximate risk of 14 in 1000 of a blood transfusion. [new 2014]

Explain to the woman that physiological management:

- Is associated with nausea and vomiting in about 50 in 1000 women
- Is associated with an approximate risk of 29 in 1000 of a haemorrhage of more than 1 litre
- Is associated with an approximate risk of 40 in 1000 of a blood transfusion. [new 2014]

Discuss again with the woman at the initial assessment in labour (see 'Initial Assessment') about the different options for managing the third stage and ways of supporting her during delivery of the placenta, and ask if she has any preferences. [new 2014]

Advise the woman to have active management of the third stage, because it is associated with a lower risk of a postpartum haemorrhage and/or blood transfusion. [new 2014]

If a woman at low risk of postpartum haemorrhage requests physiological management of the third stage, support her in her choice. [2014]

Document in the records the decision that is agreed with the woman about management of the third stage. [new 2014]

For active management, administer 10 IU of oxytocin by intramuscular injection with the birth of the anterior shoulder or immediately after the birth of the baby and before the cord is clamped and cut. Use oxytocin as it is associated with fewer side effects than oxytocin plus ergometrine. [new 2014]

After administering oxytocin, clamp and cut the cord.

- Do not clamp the cord earlier than 1 minute from the birth of the baby unless there is concern about the integrity of the cord or the baby has a heartbeat below 60 beats/minute that is not getting faster.
- Clamp the cord before 5 minutes in order to perform controlled cord traction as part of active management.
- If the woman requests that the cord is clamped and cut later than 5 minutes, support her in her choice. [new 2014]

After cutting the cord, use controlled cord traction. [new 2014]

Perform controlled cord traction as part of active management only after administration of oxytocin and signs of separation of the placenta. [new 2014]

Record the timing of cord clamping in both active and physiological management. [new 2014]

Advise a change from physiological management to active management if either of the following occur:

- Haemorrhage
- The placenta is not delivered within 1 hour of the birth of the baby. [new 2014]

Offer a change from physiological management to active management if the woman wants to shorten the third stage. [new 2014]

Do not use either umbilical oxytocin infusion or prostaglandin routinely in the third stage of labour. [2014]

Retained Placenta

Secure intravenous access if the placenta is retained, and explain to the woman why this is needed. [new 2014]

Do not use umbilical vein agents if the placenta is retained. [new 2014]

Do not use intravenous oxytocic agents routinely to deliver a retained placenta. [new 2014]

Give intravenous oxytocic agents if the placenta is retained and the woman is bleeding excessively. [new 2014]

If the placenta is retained and there is concern about the woman's condition:

- Offer a vaginal examination to assess the need to undertake manual removal of the placenta

- Explain that this assessment can be painful and advise her to have analgesia. [new 2014]

If the woman reports inadequate analgesia during the assessment, stop the examination and address this immediately. [2014]

If uterine exploration is necessary and the woman is not already in an obstetric unit, arrange urgent transfer (following the general principles for transfer of care described in section 'General Principles for Transfer of Care'). [new 2014]

Do not carry out uterine exploration or manual removal of the placenta without an anaesthetic. [new 2014]

Postpartum Haemorrhage

Risk Factors

Advise women with risk factors for postpartum haemorrhage to give birth in an obstetric unit, where more emergency treatment options are available.

- Antenatal risk factors:
  - Previous retained placenta or postpartum haemorrhage
  - Maternal haemoglobin level below 85 g/litre at onset of labour
  - Body mass index (BMI) greater than 35 kg/m^2
  - Grand multiparity (parity 4 or more)
  - Antepartum haemorrhage
  - Overdistention of the uterus (for example, multiple pregnancy, polyhydramnios or macrosomia)
  - Existing uterine abnormalities
  - Low-lying placenta
  - Maternal age of 35 years or older
- Risk factors in labour:
  - Induction
  - Prolonged first, second or third stage of labour
  - Oxytocin use
  - Precipitate labour
  - Operative birth or caesarean section. [2007]

If a woman has risk factors for postpartum haemorrhage, highlight these in her notes, and make and discuss with her a care plan covering the third stage of labour. [2007]

Management

If a woman has a postpartum haemorrhage:

- Call for help
- Give immediate clinical treatment:
  - Emptying of the bladder and
  - Uterine massage and
  - Uterotonic drugs and
  - Intravenous fluids and
  - Controlled cord traction if the placenta has not yet been delivered
- Continuously assess blood loss and the woman's condition, and identify the source of the bleeding
- Give supplementary oxygen
- Arrange for transfer of the woman to obstetric-led care (following the general principles for transfer of care described in 'General Principles for Transfer of Care'). [new 2014]

Administer a bolus of one of the following as first-line treatment for postpartum haemorrhage:

- Oxytocin (10 IU intravenous) or
- Ergometrine (0.5 mg intramuscular) or
- Combined oxytocin and ergometrine (5 IU/0.5 mg intramuscular). [new 2014]

Offer second-line treatment for postpartum haemorrhage if needed. No particular uterotonic drug can be recommended over any other; options

include:

- Repeat bolus of:
  - Oxytocin (intravenous)
  - Ergometrine (intramuscular, or cautiously intravenously)
  - Combined oxytocin and ergometrine (intramuscular)
- Misoprostol
- Oxytocin infusion
- Carboprost (intramuscular). [new 2014]

Assess the need for adjuvant options for managing significant continuing postpartum haemorrhage, including:

- Tranexamic acid (intravenous)
- Rarely, in the presence of otherwise normal clotting factors, rFactor VIIa, in consultation with a haematologist. [new 2014]

Allocate a member of the healthcare team to stay with the woman and her birth companion(s), explain what is happening, answer any questions and offer support throughout the emergency situation. [new 2014]

If the haemorrhage continues:

- Perform examination under anaesthetic
- Ensure that the uterus is empty and repair any trauma
- Consider balloon tamponade before surgical options. [new 2014]

Be aware that no particular surgical procedure can be recommended over any other for treating postpartum haemorrhage. [new 2014]

The maternity service and ambulance service should have strategies in place in order to respond quickly and appropriately if a woman has a postpartum haemorrhage in any setting. [new 2014]

Care of the Newborn Baby

Initial Assessment of the Newborn Baby and Mother–Baby Bonding

Record the Apgar score routinely at 1 and 5 minutes for all births. [2007]

Record the time from birth to the onset of regular respirations. [new 2014]

If the baby is born in poor condition (on the basis of abnormal breathing, heart rate or tone):

- Follow recommendations under 'Neonatal Resuscitation' and
- Take paired cord-blood samples for blood gas analysis, after clamping the cord using 2 clamps.

Continue to evaluate and record the baby's condition until it is improved and stable. [new 2014]

Do not take paired cord blood samples (for blood gas analysis) routinely. [new 2014]

Ensure that a second clamp to allow double-clamping of the cord is available in all birth settings. [2014]

Encourage women to have skin-to-skin contact with their babies as soon as possible after the birth[3]. [2007]

In order to keep the baby warm, dry and cover him or her with a warm, dry blanket or towel while maintaining skin-to-skin contact with the woman. [2007]

Avoid separation of a woman and her baby within the first hour of the birth for routine postnatal procedures, for example, weighing, measuring and bathing, unless these measures are requested by the woman, or are necessary for the immediate care of the baby.[3] [2007]

Encourage initiation of breastfeeding as soon as possible after the birth, ideally within 1 hour.[3] [2007]

Record head circumference, body temperature and birth weight soon after the first hour following birth. [2007]

Undertake an initial examination to detect any major physical abnormality and to identify any problems that require referral. [2007]

Ensure that any examination or treatment of the baby is undertaken with the consent of the parents and either in their presence or, if this is not possible, with their knowledge. [2007]

[3]Recommendations relating to immediate postnatal care (within 2 hours of birth) have been adapted from the NICE guideline Postnatal care ; please refer to this for further guidance on care after birth.

Neonatal Resuscitation

In the first minutes after birth, evaluate the condition of the baby – specifically respiration, heart rate and tone – in order to determine whether resuscitation is needed according to nationally accredited guidelines on neonatal resuscitation. [new 2014]

All relevant healthcare professionals caring for women during birth should attend annually a course in neonatal resuscitation that is consistent with nationally accredited guidelines on neonatal resuscitation. [new 2014]

In all birth settings:

- Bear in mind that it will be necessary to call for help if the baby needs resuscitation, and plan accordingly
- Ensure that there are facilities for resuscitation, and for transferring the baby to another location if necessary
- Develop emergency referral pathways for both the woman and the baby, and implement these if necessary. [new 2014]

If a newborn baby needs basic resuscitation, start with air. [2014]

Minimise separation of the baby and mother, taking into account the clinical circumstances. [new 2014]

Throughout an emergency situation in which the baby needs resuscitation, allocate a member of the healthcare team to talk with, and offer support to, the woman and any birth companion(s). [new 2014]

Care of Babies in the Presence of Meconium

In the presence of any degree of meconium:

- Do not suction the baby's upper airways (nasopharynx and oropharynx) before birth of the shoulders and trunk
- Do not suction the baby's upper airways (nasopharynx and oropharynx) if the baby has normal respiration, heart rate and tone
- Do not intubate if the baby has normal respiration, heart rate and tone. [new 2014]

If there has been significant meconium (see 'Presence of Meconium') and the baby does not have normal respiration, heart rate and tone, follow nationally accredited guidelines on neonatal resuscitation, including early laryngoscopy and suction under direct vision. [new 2014]

If there has been significant meconium and the baby is healthy, closely observe the baby within a unit with immediate access to a neonatologist.

Perform these observations at 1 and 2 hours of age and then 2-hourly until 12 hours of age. [new 2014]

If there has been non-significant meconium, observe the baby at 1 and 2 hours of age in all birth settings. [new 2014]

If any of the following are observed after any degree of meconium, ask a neonatologist to assess the baby (transfer both the woman and baby if they are at home or in a freestanding midwifery unit, following the general principles for transfer of care described in 'General Principles for Transfer of Care'):

- Respiratory rate above 60 per minute
- The presence of grunting
- Heart rate below 100 or above 160 beats/minute
- Capillary refill time above 3 seconds
- Body temperature of 38°C or above, or 37.5°C on 2 occasions 30 minutes apart
- Oxygen saturation below 95% (measuring oxygen saturation is optional after non-significant meconium)
- Presence of central cyanosis, confirmed by pulse oximetry if available. [new 2014]

Explain the findings to the woman, and inform her about what to look out for and who to talk to if she has any concerns. [new 2014]

Babies Born to Women with Prelabour Rupture of the Membranes at Term

Closely observe any baby born to a woman with prelabour rupture of the membranes (more than 24 hours before the onset of established labour) at term for the first 12 hours of life (at 1 hour, 2 hours, 6 hours and 12 hours) in all settings. Include assessment of:

- Temperature
- Heart rate
- Respiratory rate
- Presence of respiratory grunting
- Significant subcostal recession
- Presence of nasal flare
- Presence of central cyanosis, confirmed by pulse oximetry if available
- Skin perfusion assessed by capillary refill
- Floppiness, general wellbeing and feeding.

If any of these are observed, ask a neonatologist to assess the baby (transfer both the woman and baby if they are at home or in a freestanding midwifery unit, following the general principles for transfer of care described in 'General Principles for Transfer of Care'). [new 2014]

If there are no signs of infection in the woman, do not give antibiotics to either the woman or the baby, even if the membranes have been ruptured for over 24 hours. [2007]

If there is evidence of infection in the woman, prescribe a full course of broad-spectrum intravenous antibiotics. [2007]

Advise women with prelabour rupture of the membranes to inform their healthcare professionals immediately of any concerns they have about their baby's wellbeing in the first 5 days after birth, particularly in the first 12 hours when the risk of infection is greatest. [2007]

Do not perform blood, cerebrospinal fluid and/or surface culture tests in an asymptomatic baby. [2007]

Refer a baby with any symptom of possible sepsis, or born to a woman who has evidence of chorioamnionitis, to a neonatal care specialist immediately. [2007]

Care of the Woman After Birth

Initial Assessment

Carry out the following observations of the woman after birth:

- Record her temperature, pulse and blood pressure. Transfer the woman (with her baby) to obstetric-led care if any of the relevant indications listed in recommendation about transferring the woman to obstetricâ€‘led care (see 'Ongoing Assessment') are met.
- Uterine contraction and lochia
- Examine the placenta and membranes: assess their condition, structure, cord vessels and completeness. Transfer the woman (with her baby) to obstetric-led care if the placenta is incomplete.
- Early assessment of the woman's emotional and psychological condition in response to labour and birth.
- Successful voiding of the bladder. Assess whether to transfer the woman (with her baby) to obstetric-led care after 6 hours if her bladder is palpable and she is unable to pass urine.

If transferring the woman to obstetric-led care, follow the general principles for transfer of care described in 'General Principles for Transfer of Care'). [new 2014]

Perineal Care

Define perineal or genital trauma caused by either tearing or episiotomy as follows:

- First degree – injury to skin only
- Second degree – injury to the perineal muscles but not the anal sphincter
- Third degree – injury to the perineum involving the anal sphincter complex:
    - 3a – less than 50% of external anal sphincter thickness torn
    - 3b – more than 50% of external anal sphincter thickness torn
    - 3c – internal anal sphincter torn.
- Fourth degree – injury to the perineum involving the anal sphincter complex (external and internal anal sphincter) and anal epithelium. [2007]

Before assessing for genital trauma:

- Explain to the woman what is planned and why
- Offer inhalational analgesia

- Ensure good lighting
- Position the woman so that she is comfortable and so that the genital structures can be seen clearly. [2007]

Perform the initial examination gently and with sensitivity. It may be done in the immediate period after birth. [2007]

If genital trauma is identified after birth, offer further systematic assessment, including a rectal examination. [2007]

Include the following in a systematic assessment of genital trauma:

- Further explanation of what is planned and why
- Confirmation by the woman that tested effective local or regional analgesia is in place
- Visual assessment of the extent of perineal trauma to include the structures involved, the apex of the injury and assessment of bleeding
- A rectal examination to assess whether there has been any damage to the external or internal anal sphincter if there is any suspicion that the perineal muscles are damaged. [2007]

Ensure that the timing of this systematic assessment does not interfere with mother–baby bonding unless the woman has bleeding that requires urgent attention. [2007]

Assist the woman to adopt a position that allows adequate visual assessment of the degree of trauma and for repair. Only maintain this position for as long as necessary for systematic assessment and repair. If it is not possible to adequately assess the trauma, transfer the woman (with her baby) to obstetric-led care, following the general principles for transfer of care described in 'General Principles for Transfer of Care'). [2007, amended 2014]

Seek advice from a more experienced midwife or obstetrician if there is uncertainty about the nature or extent of the trauma. Transfer the woman (with her baby) to obstetric-led care (following the general principles for transfer of care described in 'General Principles for Transfer of Care') if the repair needs further surgical or anaesthetic expertise. [2007, amended 2014]

Document the systematic assessment and its results fully, possibly pictorially. [2007]

All relevant healthcare professionals should attend training in perineal/genital assessment and repair, and ensure that they maintain these skills. [2007]

Undertake repair of the perineum as soon as possible to minimise the risk of infection and blood loss. [2007]

When carrying out perineal repair:

- Ensure that tested effective analgesia is in place, using infiltration with up to 20 ml of 1% lidocaine or equivalent
- Top up the epidural or insert a spinal anaesthetic if necessary. [2007]

If the woman reports inadequate pain relief at any point, address this immediately. [2007]

Advise the woman that in the case of first-degree trauma, the wound should be sutured in order to improve healing, unless the skin edges are well opposed. [2007]

Advise the woman that in the case of second-degree trauma, the muscle should be sutured in order to improve healing. [2007]

If the skin is opposed after suturing of the muscle in second-degree trauma, there is no need to suture it. [2007]

If the skin does require suturing, use a continuous subcuticular technique. [2007]

Undertake perineal repair using a continuous non-locked suturing technique for the vaginal wall and muscle layer. [2007]

Use an absorbable synthetic suture material to suture the perineum. [2007]

Offer rectal non-steroidal anti-inflammatory drugs routinely after perineal repair of first- and second-degree trauma provided these drugs are not contraindicated. [2007]

Observe the following basic principles when performing perineal repairs:

- Repair perineal trauma using aseptic techniques.
- Check equipment and count swabs and needles before and after the procedure.
- Good lighting is essential to see and identify the structures involved.

- Ensure that difficult trauma is repaired by an experienced practitioner in theatre under regional or general anaesthesia.
- Insert an indwelling catheter for 24 hours to prevent urinary retention.
- Ensure that good anatomical alignment of the wound is achieved and that consideration is given to the cosmetic results.
- Carry out rectal examination after completing the repair to ensure that suture material has not been accidentally inserted through the rectal mucosa.
- After completion of the repair, document an accurate detailed account covering the extent of the trauma, the method of repair and the materials used.
- Give the woman information about the extent of the trauma, pain relief, diet, hygiene and the importance of pelvic-floor exercises. [2007]

Definitions:

Strength of Recommendations

Some recommendations can be made with more certainty than others. The Guideline Development Group (GDG) makes a recommendation based on the trade-off between the benefits and harms of an intervention, taking into account the quality of the underpinning evidence. For some interventions, the GDG is confident that, given the information it has looked at, most patients would choose the intervention. The wording used in the recommendations in this guideline denotes the certainty with which the recommendation is made (the strength of the recommendation).

Interventions That Must (or Must Not) Be Used

The GDG usually uses 'must' or 'must not' only if there is a legal duty to apply the recommendation. Occasionally the GDG uses 'must' (or 'must not') if the consequences of not following the recommendation could be extremely serious or potentially life threatening.

Interventions That Should (or Should Not) Be Used – a 'Strong' Recommendation

The GDG uses 'offer' (and similar words such as 'refer' or 'advise') when confident that, for the vast majority of patients, an intervention will do more good than harm, and be cost effective. Similar forms of words (for example, 'Do not offer…') are used when the GDG is confident that an intervention will not be of benefit for most patients.

Interventions That Could Be Used

The GDG uses 'consider' when confident that an intervention will do more good than harm for most patients, and be cost effective, but other options may be similarly cost effective. The choice of intervention, and whether or not to have the intervention at all, is more likely to depend on the patient's values and preferences than for a strong recommendation, and so the healthcare professional should spend more time considering and discussing the options with the patient.

Clinical Algorithm(s)

A NICE pathway titled and "Intrapartum Care Overview" is available from the National Institute for Health and Care Excellence (NICE) Web site .

Scope

Disease/Condition(s)

- Pregnancy
- Labour
- Childbirth

Guideline Category

Counseling

Evaluation

Management

Risk Assessment

Treatment

Clinical Specialty

Family Practice

Obstetrics and Gynecology

Pediatrics

Surgery

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Health Care Providers

Hospitals

Managed Care Organizations

Nurses

Patients

Physician Assistants

Physicians

Public Health Departments

Guideline Objective(s)

- To provide guidance for the care of healthy women with uncomplicated pregnancies entering labour at low risk of developing intrapartum complications
- To address the care of women who start labour as 'low risk' but who go on to develop complications

Target Population

- Healthy women with uncomplicated pregnancies entering labour at low risk of developing intrapartum complications
- Healthy women who start labour as 'low risk' but go on to develop complications (these include women with prelabour rupture of membranes at term, care of the woman and baby when meconium is present, indications for continuous cardiotocography, interpretation of cardiotocograph traces, and management of retained placenta and postpartum haemorrhage)

Note: Women or their babies in suspected or confirmed preterm labour (before 37 weeks of gestation); women with an intrauterine fetal death; women with co-existing severe morbidities such as pre-eclampsia (high blood pressure of pregnancy) or diabetes; women who have multiple pregnancies; and women with intrauterine growth restriction of the fetus are outside the remit of the guideline.

Interventions and Practices Considered

1. Choice of place of birth and information about possible risks

2. Provision of one-to-one care in all birth settings
3. Assessment of need for intrapartum transfer
4. Multidisciplinary care throughout labour that includes good communication and support
5. Initial assessment
    - Observation of the woman
    - Observation of the unborn baby
    - Measurement of fetal and maternal heart rates
6. Ongoing assessment
7. Transfer of care if necessary
8. Care in established labour
    - Supportive one-to-one care
    - Control of gastric acidity
9. Pain relief: non-regional analgesia
    - Breathing and relaxation techniques
    - Massage
    - Labour in water
    - Transcutaneous nerve stimulation (not recommended in established labour)
    - Inhalational analgesia (Entonox)
    - Intravenous and intramuscular opioids (pethidine, diamorphine, other opioids) plus an antiemetic
10. Pain relief in labour: regional analgesia
    - Information about risks and benefits
    - Epidural or combined spinal-epidural
    - Maintenance of epidural analgesia
11. Management of prelabour rupture of membranes at term
12. Management of labour: first stage
    - Observations
    - Routine interventions: oxytocin, amniotomy (not recommended), vaginal examination
    - Diagnosis and management of delay
13. Management of labour: second stage
    - Observations and assessment of progress documented
    - Oxytocin or regional analgesia
    - Intrapartum interventions to reduce perineal trauma
    - Diagnosis and management of delay
    - Instrumental birth
    - Expediting birth
14. Management of labour: third stage
    - Diagnosis of prolonged third stage
    - Observations
    - Active physiological management
    - Management of retained placenta and postpartum haemorrhage
15. Management of labour: care of the baby and woman immediately after birth
    - Initial assessment of the newborn baby and mother
    - Neonatal resuscitation
    - Care of babies in the presence of meconium
    - Care of babies born to mothers with prelabour rupture of membranes
    - Perineal care

Major Outcomes Considered

- Women's and babies' mortality
- Complications and long-term outcomes
- Women's satisfaction
- Labour events (length of labour and interventions)
- Birth events (mode or place of birth, complications of birth, perineal trauma)

- Newborn events (condition at birth, birth injuries, admission to neonatal units)
- Women's assessment of birth experience
- Women's mental and psychological health

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): This guideline was developed by the National Collaborating Centre for Women's and Children's Health (NCC-WCH) on behalf of the National Institute for Health and Care Excellence (NICE). See the "Availability of Companion Documents" field for the full version of this guidance.

Developing Review Questions and Protocols and Identifying Evidence

The Guideline Development Group (GDG) formulated review questions based on the scope (see Appendix B in the full guideline appendices [see the "Availability of Companion Documents" field]) and prepared a protocol for each review question (see Appendix E in the full guideline appendices). These formed the starting point for systematic reviews of relevant evidence. Published evidence was identified by applying systematic search strategies (see Appendix F in the full guideline appendices) to the following databases: Medline (1946 onwards), EMBASE (1974 onwards), the Health Technology Assessment (HTA) database, and three Cochrane databases (Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and the Database of Abstracts of Reviews of Effects). Searches to identify economic studies were undertaken using the above databases and the NHS Economic Evaluation Database (NHS EED). The Cumulative Index to Nursing and Allied Health Literature (CINAHL; 1980 onwards) was searched for selected topics only. Where possible, searches were limited to English-language only. Generic and specially developed search filters were used to identify particular study designs, such as randomised controlled trials (RCTs). There was no systematic attempt to search grey literature (conference abstracts, theses or unpublished trials), nor was hand searching of journals not indexed on the databases undertaken.

Towards the end of the guideline development process, the searches were updated and re-executed to include evidence published and indexed in the databases by 11th February 2014.

Number of Source Documents

Refer to Appendix G in the full version of the guideline (see the "Availability of Companion Documents" field) for flow diagrams of clinical selection, which detail the total number of studies included for each guideline topic.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Overall Quality of Outcome Evidence in Grading of Recommendations Assessment, Development and Evaluation (GRADE)

Level	Description
High	Further research is very unlikely to change confidence in the estimate of effect.
Moderate	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Low	Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the

Level	Description
	estimate.
Very Low	Any estimate of effect is very uncertain.

Methods Used to Analyze the Evidence

Meta-Analysis

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): This guideline was developed by the National Collaborating Centre for Women's and Children's Health (NCC-WCH) on behalf of the National Institute for Health and Care Excellence (NICE). See the "Availability of Companion Documents" field for the full version of this guidance.

Reviewing and Synthesising Evidence

Evidence relating to clinical effectiveness was reviewed and synthesised according to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach (see http://www.gradeworkinggroup.org/index.htm). In the GRADE approach, the quality of the evidence identified for each outcome listed in the review protocol is assessed according to the factors listed below, and an overall quality rating (high, moderate, low, or very low) is assigned by combining the ratings for the individual factors.

- Study design (as an indicator of intrinsic bias; this determines the initial quality rating)
- Limitations in the design or execution of the study (including concealment of allocation, blinding, loss to follow up; these can reduce the quality rating)
- Inconsistency of effects across studies (this can reduce the quality rating)
- Indirectness (the extent to which the available evidence fails to address the specific review question; this can reduce the quality rating)
- Imprecision (this can reduce the quality rating)
- Other considerations (including large magnitude of effect, evidence of a dose-response relationship, or confounding variables likely to have reduced the magnitude of an effect; these can increase the quality rating in observational studies, provided no downgrading for other features has occurred)

The type of review question determines the highest level of evidence that may be sought. For issues of therapy or treatment, the highest possible evidence level is a well-conducted systematic review or meta-analysis of randomised controlled trials (RCTs), or an individual RCT. In the GRADE approach, a body of evidence based entirely on such studies has an initial quality rating of high, and this may be downgraded to moderate, low, or very low if factors listed above are not addressed adequately. Within the GRADE system it is necessary to predetermine values for minimum important differences in outcomes. For categorical outcomes the GRADE default of +/- 0.25 for risk ratios and odds ratios was used. Where the Guideline Development Group (GDG) chose a continuous variable as a priority outcome the minimum important difference was also decided and used when grading the evidence and in judging whether any observed differences between groups could be considered clinically significant (see Section 1.10.7 in the full version of the guideline for the list of minimum important differences used in this guideline). For issues of prognosis, the highest possible level of evidence is a controlled observational study (a cohort study or case–control study), and a body of evidence based on such studies would have an initial quality rating of low, which might be downgraded to very low or upgraded to moderate or high, depending on the factors listed above.

For each review question the highest available level of evidence was sought. Where appropriate, for example, if a systematic review, meta-analysis or RCT was identified to answer a question directly, studies of a weaker design were not considered. Where systematic reviews, meta-analyses and RCTs were not identified other appropriate experimental or observational studies were sought. For diagnostic tests, test evaluation studies examining the performance of the test were used if the accuracy of the test was required, but where an evaluation of the effectiveness of the test in the clinical management of the condition was required, evidence from RCTs or cohort studies was optimal. For studies evaluating the accuracy of a diagnostic test, sensitivity, specificity and likelihood ratios for positive and negative test results (LR+ and LR–, respectively), were calculated or quoted where possible (see Table 4 in the full version of the guideline).

The GRADE system described above covers studies of treatment effectiveness. However, it is less well established for studies reporting accuracy

of diagnostic tests. For such studies, NICE recommends using the Quality Assessment of Studies of Diagnostic Accuracy (QUADAS) methodology checklist to assess study quality (see the NICE guidelines manual [see the "Availability of Companion Documents" field]).

Some studies were excluded from the guideline reviews after obtaining copies of the corresponding publications because they did not meet inclusion criteria specified by the GDG (see Appendix E in the full guideline appendices [see the "Availability of Companion Documents" field]). The characteristics of each included study were summarised in evidence tables for each review question (see Appendix I in the full guideline appendices). Where possible, dichotomous outcomes were presented as relative risks or odds ratios (ORs) with 95% confidence intervals (CIs), and continuous outcomes were presented as mean differences with 95% CIs or standard deviations (SDs).

The body of evidence identified for each review question (or part of a review question) was presented in the form of a GRADE evidence profile summarising the quality of the evidence and the findings (pooled relative and absolute effect sizes and associated CIs). Where possible, the body of evidence corresponding to each outcome specified in the review protocol was subjected to quantitative meta-analysis. In such cases, pooled effect sizes were presented as pooled risk ratios, pooled ORs, or weighted mean differences. By default, meta-analyses were conducted by fitting fixed effects models, but where statistically significant heterogeneity was identified random effects models were used. Where quantitative meta-analysis could not be undertaken (for example, because of heterogeneity in the included studies) the effect sizes reported in the included studies was presented for each individual study.

Methods Used to Formulate the Recommendations

Expert Consensus

Informal Consensus

Description of Methods Used to Formulate the Recommendations

Note from the National Guideline Clearinghouse (NGC): This guideline was developed by the National Collaborating Centre for Women's and Children's Health (NCC-WCH) on behalf of the National Institute for Health and Care Excellence (NICE). See the "Availability of Companion Documents" field for the full version of this guidance.

Who Has Developed the Guideline?

The updated guideline was developed on the same basis as the original guideline. Membership for the updated guideline comprised an obstetrician as the Chair, two further obstetricians, two midwives, a neonatologist, an obstetric anaesthetist, a commissioner of maternity services and two lay members. For details of Guideline Development Group (GDG) members' declarations of interests see Appendix D in the full version of the guideline.

Evidence to Recommendations

For each review question recommendations for clinical care were derived using, and linked explicitly to, the evidence that supported them. In the first instance, informal consensus methods were used by the GDG to agree short clinical and, where appropriate, cost-effectiveness evidence statements which were presented alongside the evidence profiles. Statements summarising the GDG's interpretation of the evidence and any extrapolation from the evidence used to form recommendations were also prepared to ensure transparency in the decision-making process. The criteria used in moving from evidence to recommendations were as follows:

- Relative value placed on the outcomes considered
- Consideration of the clinical benefits and harms
- Consideration of net health benefits and resource use
- Quality of the evidence
- Other considerations (including equalities issues)

In areas where no substantial clinical research evidence was identified, the GDG considered other evidence-based guidelines and consensus statements or used their collective experience to identify good practice. The health economics justification in areas of the guideline where the use of National Health Service (NHS) resources (interventions) was considered was based on GDG consensus in relation to the likely cost effectiveness implications of the recommendations. The GDG also identified areas where evidence to answer their review questions was lacking and used this information to formulate recommendations for future research.

Towards the end of the guideline development process formal consensus methods were used to consider all the clinical care recommendations and

research recommendations that had been drafted previously. The GDG identified 10 'key priorities for implementation' (key recommendations) and 5 high-priority research recommendations. The key priorities for implementation were those recommendations thought likely to have the biggest impact on the care of women in labour and outcomes in the NHS as a whole; they were selected using a variant of the nominal group technique (see the NICE guidelines manual [see the "Availability of Companion Documents" field]). The priority research recommendations were selected in a similar way.

Rating Scheme for the Strength of the Recommendations

Strength of Recommendations

Some recommendations can be made with more certainty than others. The Guideline Development Group (GDG) makes a recommendation based on the trade-off between the benefits and harms of an intervention, taking into account the quality of the underpinning evidence. For some interventions, the GDG is confident that, given the information it has looked at, most patients would choose the intervention. The wording used in the recommendations in this guideline denotes the certainty with which the recommendation is made (the strength of the recommendation).

Interventions That Must (or Must Not) Be Used

The GDG usually uses 'must' or 'must not' only if there is a legal duty to apply the recommendation. Occasionally the GDG uses 'must' (or 'must not') if the consequences of not following the recommendation could be extremely serious or potentially life threatening.

Interventions That Should (or Should Not) Be Used – a 'Strong' Recommendation

The GDG uses 'offer' (and similar words such as 'refer' or 'advise') when confident that, for the vast majority of patients, an intervention will do more good than harm, and be cost effective. Similar forms of words (for example, 'Do not offer…') are used when the GDG is confident that an intervention will not be of benefit for most patients.

Interventions That Could Be Used

The GDG uses 'consider' when confident that an intervention will do more good than harm for most patients, and be cost effective, but other options may be similarly cost effective. The choice of intervention, and whether or not to have the intervention at all, is more likely to depend on the patient's values and preferences than for a strong recommendation, and so the healthcare professional should spend more time considering and discussing the options with the patient.

Recommendation Wording in Guideline Updates

The National Institute for Health and Care Excellence (NICE) began using this approach to denote the strength of recommendations in guidelines that started development after publication of the 2009 version of 'The guidelines manual' (January 2009). This does not apply to any recommendations ending [2007] (see 'Update information' above for details about how recommendations are labelled). In particular, for recommendations labelled [2007] the word 'consider' may not necessarily be used to denote the strength of the recommendation.

Cost Analysis

Assessing Cost-effectiveness

The aims of the health economic input to the guideline were to inform the Guideline Development Group (GDG) of potential economic issues relating to intrapartum care, and to ensure that recommendations represented a cost effective use of healthcare resources. Health economic evaluations aim to integrate data on benefits (ideally in terms of quality adjusted life years [QALYs]), harms and costs of different care options.

The GDG prioritised a number of review questions where it was thought that economic considerations would be particularly important in formulating recommendations. Systematic searches for published economic evidence were undertaken for these questions. For economic evaluations, no standard system of grading the quality of evidence exists and included papers were assessed using a quality assessment checklist based on good practice in economic evaluation. Reviews of the (very limited) relevant published health economic literature are presented alongside the clinical effectiveness reviews.

Health economic considerations were aided by original economic analysis undertaken as part of the development process. For this guideline the areas prioritised for economic analysis were as follows:

- Fetal assessment and monitoring during labour:

    - Cardiotocography using telemetry
    - Electrocardiogram (ECG) analysis with continuous electronic fetal monitoring (EFM) compared with continuous EFM alone
- Management of the third stage of labour: management of retained placenta
- Medical management of postpartum haemorrhage

Additionally the following areas were identified as being relevant for economic consideration:

- Intrapartum care provided in different birth settings
- Interventions during the latent (early) phase of labour
- Pain-relieving strategies that can be used at home without support from a health care professional
- Fetal blood sampling
- Appropriate staffing configuration of midwives on labour ward to support one-to-one continuous care during labour

To enable assessment of cost-effectiveness in the guideline a costing survey was developed and carried out with the GDG in order to define costs related to intrapartum care that were unavailable from other sources (see Appendix A in the full guideline appendices [see the "Availability of Companion Documents" field]).

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

Stakeholder Involvement

Registered stakeholder organisations were invited to comment on the draft scope and on the first draft of the guideline.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate intrapartum care of healthy women and their babies

Refer to the "Consideration of clinical benefits and harms" sections in the full version of the guideline (see the "Availability of Companion Documents" field) for benefits of specific interventions.

Potential Harms

- In both types of unit (obstetric unit vs freestanding), the rates of transfer were three times higher for nulliparous women than for multiparous women, however the Guideline Development Group (GDG) felt that on balance the advantages of a freestanding unit outweighed any potential harms and nulliparous women wishing to given birth in freestanding units should be supported in this. Adverse neonatal outcomes are listed in Appendix A in the original guideline document.
- The group noted that for nulliparous women without complicating conditions at the onset of labour, the evidence suggested that there was a higher risk to babies of planning birth at home; however, they also concluded that the risk was very low across both settings. The evidence suggested that there was no higher risk to babies of multiparous women planning birth at home.

- In weighing up the risks and benefits of a comprehensive risk assessment at first contact, the group recognised that there are some potential harms, i.e., the small risk of infection from performing a vaginal examination, and the potential risk of making the woman anxious if the documentation takes too long. However, the group agreed that these harms were far outweighed by the benefits of conducting the assessment and ensuring prompt onward referral; namely that the risks of any complications should be reduced by timely identification. This in turn should improve both neonatal and maternal outcomes.
- The group recognised that the benefits of an initial assessment depend upon it being conducted effectively by the attending midwife. Any misjudgements leading to inappropriate transfer might lead a poorer experience of labour and birth for the woman and to an increase in the risk of unnecessary intervention. However, these misjudgements are made less likely if the assessment is carried out systematically following clear guidelines with thresholds for transfer.
- Adverse events related to active management are mainly minor and transient. Although hypertension is more likely with active management the numbers appear small (1.4% compared to 0.56%). The GDG considered maternal side effects and noted that rates of nausea, vomiting and hypertension were all higher in women allocated to receive active management. They agreed that this might be a significant consideration for women in terms of their birth experience and that it was important that women were informed about these possible side effects. However, they also noted that most of the studies used oxytocin plus ergometrine, which is associated with a higher incidence of side effects when compared to the recommended uterotonic of oxytocin.
- Disadvantages of cardiotocography (CTG) use include the increased likelihood that women may be left alone, mobility may be reduced, and women may be more frightened as they hear changes in the fetal heart rate. Clinical staff may focus on the recording rather than the woman, or derive a sense of false reassurance and fail to act promptly in the face of abnormality, or over-react in the face of normal physiological fetal heart rate changes which may in turn lead to increase in the rate of interventions. The CTG is sometimes incorrectly used in place of continuous supportive one-to-one care. There is an argument that CTG can cause more harm in terms of unnecessary intervention due to the high false positive rate without the purported benefit.
- The group recognised the potential disadvantages of using electrocardiography (ECG) analysis in conjunction with CTG. In order to monitor using ECG analysis the invasive procedures of amniotomy and the insertion of a fetal scalp electrode need to be performed. Amniotomy was felt by some GDG members to be associated with an increase in the pain of contractions and the application of a fetal scalp electrode was acknowledged to be associated with a small increase in the risk of trauma to and infection in the baby.
- There were statistically significant differences in a number of measures of neonatal haemoglobin (with lower rates in the early cord clamping group). However, these differences did not cross the GDG's pre-agreed thresholds (2 g/dL) for a minimally important clinical difference for neonatal haemoglobin at 24 to 48 hours, 2 to 4 months and 3 to 6 months. There was a statistically significantly higher rate of infant haematocrit <45% at both 6 hours and 24 to 48 hours in the early cord clamping group. There were also statistically significantly lower rates of infant ferritin levels at 3, 4 and 6 months in the early cord clamping group. Although this suggests a potential harm the group did not feel that ferritin level was a particularly helpful outcome because of a large normal range for ferritin levels.
- The GDG noted that in one study for the second line treatment of postpartum haemorrhage (PPH), tranexamic acid was associated with a significant reduction in decreased haemoglobin over 4 g/dl compared with the standard treatment. However, it was also associated with significantly higher adverse outcomes (nausea, vomiting and dizziness).
- Intravenous and intramuscular opioids will provide limited pain relief during labour and may have significant side effects for both the mother (drowsiness, nausea and vomiting) and her baby (short-term respiratory depression and drowsiness which may last several days).

Refer to the "Consideration of clinical benefits and harms" sections in the full version of the guideline (see the "Availability of Companion Documents" field) for harms of specific interventions.

Contraindications

Contraindications

- Do not carry out fetal blood sampling if any contraindications are present, including risk of maternal-to-fetal transmission of infection or risk of fetal bleeding disorders.
- Do not use maternal facial oxygen therapy for intrauterine fetal resuscitation, because it may harm the baby (but it can be used where it is administered for maternal indications such as hypoxia or as part of preoxygenation before a potential anaesthetic).

Qualifying Statements

Qualifying Statements

- This guidance represents the view of The National Institute for Health and Care Excellence (NICE), which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summaries of product characteristics of any drugs.
- Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.
- Advice on treatment options will be based on the best evidence available to the Guideline Development Group (GDG). When referring to pharmacological treatments, the guideline will normally make recommendations within the licensed indications. Exceptionally, and only where the evidence supports it, the guideline may recommend use outside the licensed indications. The guideline will assume that prescribers will use the Summary of Product Characteristics to inform their prescribing decisions for individual consumers.
- Treatment and care should take into account individual needs and preferences. Patients should have the opportunity to make in for med decisions about their care and treatment, in partnership with their healthcare professionals. If someone does not have the capacity to make decisions, healthcare professionals should follow the Department of Health's advice on consent , the code of practice that accompanies the Mental Capacity Act and the supplementary code of practice on deprivation of liberty safeguards .
- NICE has produced guidance on the components of good patient experience in adult NHS services. All healthcare professionals should follow the recommendations in Patient experience in adult NHS services .
- For all recommendations, NICE expects that there is discussion with the patient about the risks and benefits of the interventions, and their values and preferences. This discussion aims to help them to reach a fully informed decision (see also Woman-centred care).
- This guideline updates and replaces NICE guideline CG55 (published September 2007). It has not been possible to update all sections and recommendations in this update of the guideline. This means some of the recommendations that have not been reviewed may not reflect current practice. Areas for review and update were identified and agreed through the scoping process and stakeholder feedback.

Implementation of the Guideline

Description of Implementation Strategy

Key Priorities for Implementation

Place of Birth

Explain to both multiparous and nulliparous women that they may choose any birth setting (home, freestanding midwifery unit, alongside midwifery unit or obstetric unit), and support them in their choice of setting wherever they choose to give birth:

- Advise low-risk multiparous women that planning to give birth at home or in a midwifery-led unit (freestanding or alongside) is particularly suitable for them because the rate of interventions is lower and the outcome for the baby is no different compared with an obstetric unit.
- Advise low-risk nulliparous women to plan to give birth in a midwifery-led unit (freestanding or alongside). Explain that this is because the rate of interventions is lower and the outcome for the baby is no different compared with an obstetric unit, but if they plan birth at home there is a small increase in the risk of an adverse outcome for the baby. [new 2014]

Commissioners and providers (this can also include networks of providers) should ensure that all 4 birth settings are available to all women (in the local area or in a neighbouring area). [new 2014]

Providers, senior staff and all healthcare professionals should ensure that in all birth settings there is a culture of respect for each woman as an individual undergoing a significant and emotionally intense life experience, so that the woman is in control, is listened to and is cared for with compassion, and that appropriate informed consent is sought. [new 2014]

Senior staff should demonstrate, through their own words and behaviour, appropriate ways of relating to and talking about women and their

companion(s), and of talking about birth and the choices to be made when giving birth. [new 2014]

Maternity services should:

- Provide a model of care that supports one-to-one care in labour for all women and
- Benchmark services and identify overstaffing or understaffing by using workforce planning models and/or woman-to-midwife ratios. [new 2014]

Commissioners and providers (this can also include networks of providers) should ensure that there are:

- Robust protocols in place for transfer of care between settings (see also 'General Principles for Transfer of Care' in the original guideline document)
- Clear local pathways for the continued care of women who are transferred from one setting to another, including:
  - When crossing provider boundaries
  - If the nearest obstetric or neonatal unit is closed to admissions or the local midwifery-led unit is full. [new 2014]

Measuring Fetal Heart Rate as Part of Initial Assessment

Do not perform cardiotocography on admission for low-risk women in suspected or established labour in any birth setting as part of the initial assessment. [new 2014]

Interpretation of Cardiotocograph Traces

Do not make any decision about a woman's care in labour on the basis of cardiotocography findings alone. [new 2014]

First Stage of Labour

Do not offer or advise clinical intervention if labour is progressing normally and the woman and baby are well. [2007]

Third Stage of Labour

After administering oxytocin, clamp and cut the cord:

- Do not clamp the cord earlier than 1 minute from the birth of the baby unless there is concern about the integrity of the cord or the baby has a heartbeat below 60 beats/minute that is not getting faster.
- Clamp the cord before 5 minutes in order to perform controlled cord traction as part of active management.
- If the woman requests that the cord is clamped and cut later than 5 minutes, support her in her choice. [new 2014]

Implementation Tools

Audit Criteria/Indicators

Clinical Algorithm

Mobile Device Resources

Patient Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

National Collaborating Centre for Women's and Children's Health. Intrapartum care: care of healthy women and their babies during childbirth. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Dec. 108 p. (Clinical guideline; no. 190).

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2007 Sep (revised 2014 Dec)

Guideline Developer(s)

National Guideline Alliance - National Government Agency [Non-U.S.]

Source(s) of Funding

National Institute for Health and Care Excellence (NICE)

Guideline Committee

Guideline Development Group

Composition of Group That Authored the Guideline

Guideline Development Group (GDG): Susan Bewley, Professor of complex obstetrics, King's College London; Tracey Cooper, Consultant midwife, Lancashire Teaching Hospitals Foundation Trust; Sarah Fishburn, Lay member; Helen Ford (stood down August 2013), Senior commissioner, NHS Gloucestershire; Kevin Ives Consultant neonatologist, John Radcliffe Hospital, Oxford; Michael Lane (from January 2014), GP commissioner, Southwest London; Nuala Lucas, Consultant anaesthetist, Northwick Park Hospital, London; Bryony Strachan, Consultant obstetrician, St Michael's Hospital, Bristol; Derek Tuffnell, Consultant in obstetrics and gynaecology, Bradford Teaching Hospitals; Kylie Watson, Coordinating midwife, Central Manchester University Hospitals NHS Foundation Trust; Catherine Williams, Lay member

Financial Disclosures/Conflicts of Interest

All Guideline Development Group (GDG) members' interests were recorded on declaration forms provided by the National Institute for Health

and Care Excellence (NICE). The form covered consultancies, fee-paid work, shareholdings, fellowships, and support from the healthcare industry. The declarations are listed in Appendix D of the full version of the guideline.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: National Collaborating Centre for Women's and Children's Health. Intrapartum care. Care of healthy women and their babies during childbirth. London (UK): National Institute for Health and Clinical Excellence (NICE); 2007 Sep. 65 p. (Clinical guideline; no. 55).

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site . Also available for download in ePub and eBook formats from the NICE Web site .

Availability of Companion Documents

The following are available:

- Intrapartum care: care of healthy women and their babies during childbirth. Full guideline. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Dec. 840 p. (Clinical guideline; no. 190). Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Appendices. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Dec. 879 p. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Care pathway. London (UK): National Institute for Health and Care Excellence; 2014 Dec. 30 p. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Baseline assessment tool. London (UK): National Institute for Health and Care Excellence; 2014 Dec. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Clinical audit tool - initial assessment. London (UK): National Institute for Health and Care Excellence; 2014 Dec. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Clinical audit tool - cardiotocography monitoring during labour. London (UK): National Institute for Health and Care Excellence; 2014 Dec. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Clinical audit tool - third stage of labour. London (UK): National Institute for Health and Care Excellence; 2014 Dec. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Costing statement. London (UK): National Institute for Health and Care Excellence; 2014 Dec. 14 p. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Choosing place of birth: resource for midwives. London (UK): National Institute for Health and Care Excellence; 2014 Dec. 11 p. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- Intrapartum care: care of healthy women and their babies during childbirth. Interpretation of cardiotocograph traces table. London (UK): National Institute for Health and Care Excellence; 2014 Dec. 4 p. (Clinical guideline; no. 190). Electronic copies: Available from the NICE Web site .
- The guidelines manual 2012. London (UK): National Institute for Health and Care Excellence (NICE); 2012 Nov. Electronic copies:

Available from the NICE Web site .

Patient Resources

The following is available:

- Intrapartum care: care of healthy women and their babies during childbirth. Information for the public. London (UK): National Institute for Health and Care Excellence (NICE); 2014 Dec. 28 p. Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site . Also available for download in ePub and eBook formats from the NICE Web site .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of the National Guideline Clearinghouse (NGC) to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This NGC summary was completed by ECRI Institute on May 28, 2010. This summary was updated by ECRI Institute on March 11, 2011 following the U.S. Food and Drug Administration (FDA) advisory on Terbutaline. This summary was updated by ECRI Institute on April 28, 2015. This summary was updated by ECRI Institute on September 21, 2015 following the U.S. Food and Drug Administration advisory on non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI Institute on June 2, 2016 following the U.S. Food and Drug Administration advisory on opioid pain medicines. This summary was updated by ECRI Institute on October 21, 2016 following the U.S. Food and Drug Administration advisory on opioid pain and cough medicines combined with benzodiazepines.

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